

American FOREST



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Christmas Greetings



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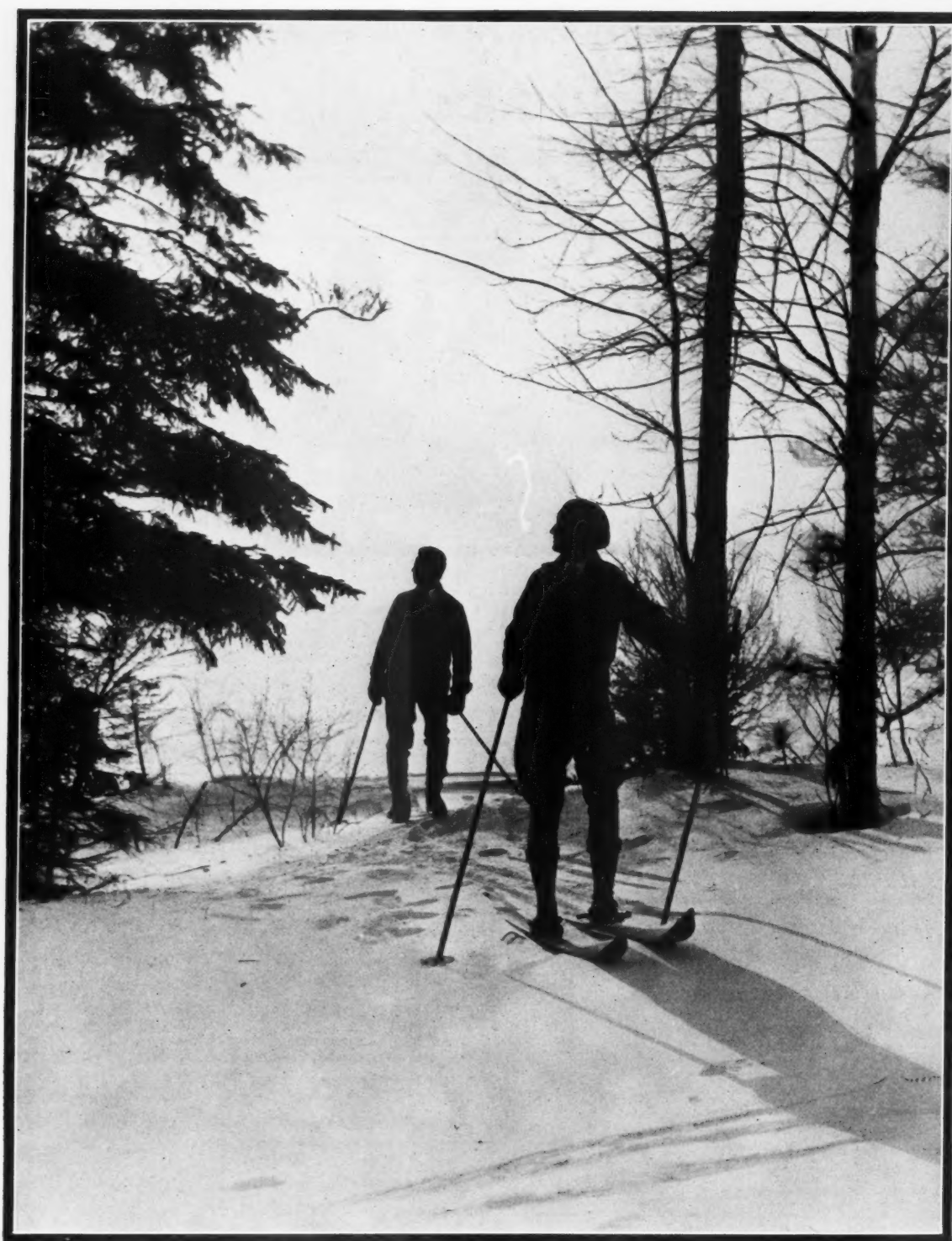
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On Christmas Day Go into the Winter Woods—so Still, so Gleamingly Misty, so Fragrant.
There You Will Sense to the Fullest the Great Gift of Divine Love—the Real Meaning of the
Day—and Peace Will Possess Your Heart.



Christmas in the Forest

By

ARCHIBALD RUTLEDGE

KNOWING and reverencing Nature since childhood days, I never feel that Christmas has been spent aright unless at least a part of that memorable day has been celebrated in the forest. Christ was distinctly a rural character. His teachings are rich with allusions to nature; and when wearied by the ways of men and by the difficulties of life, He retired into the deep bosom of the hills of Galilee, there to renew the strength and poise of His mighty spirit. He loved and understood waters and mountains, flowers and trees, the soil and all the fruits of the soil. And that is one reason why one may feel very close to Him in the woods on Christmas Day. Perhaps it is not out of place here to declare that I accept Christ as the Son of God; the one, the Creator of all things; the other, the blessed Redeemer of the souls of mankind. A genuine love of nature makes faith in God inevitable. All the woodsmen I have ever known have had a reverence of spirit. They live and move amid the mysteries of birth and life and death in the natural world, and all about them is a Presence.

On Christmas Day I love to go into the wilds of Path Valley, some fifteen miles from home. There the wild mountains are friendly; there waits for me primeval loveliness; there abides a peace that is not of this world in that it is not of man.

From the main road an old sumac-bordered lane leads towards the woods, shimmering in the winter sunshine. The deep damask tints of the autumn have faded; but the living green of the pines and hemlocks remains, and the burly, stripped strength of the white oaks and walnuts—one a golden-gray, the other swarthy. A virginal wild stillness like magic is upon the world. Even when a ruffed grouse drums softly halfway up the mountain, the dim music does not interrupt but rather supplements the tranced mountain silence. The mysterious sound seems the very voice of blue distances, of wildwood

glamour, of enchanted wilds. This bird is the spirit of all that wanders and is wild, the genius of hushed seraphic places, the child of nature's radiant solitude.

So still are my Christmas woods, so gleamingly misty the sleeping hills, so fragrant the hemlocks and pines here in the solitary forest, one is alone with Nature, with the God of Creation. One can pour out his heart to God in the woods—adoring His power in the matchless rhythm of the holy Season. And there His love listens.

A festival of childhood, of love, and of the grace of the heart, Christmas should have about it an ingenuous, elemental simplicity of spirit; and for this spirit we can draw from no source so infallible as Nature. Her antiquity and her permanence—yet her constant unwearied youth, her artless beauty, her



In the Christmas forest the woods withdraw magically. On every hand are gleaming aisles, beautiful vistas into the abode of silent beauty. All is hushed as in a mighty cathedral.

gallant serenity, her unpremeditated grace—all these are in keeping with the character of Christmas Day. For it is the birthday of love divine—older than the dawn, yet new to the world each year with the coming of the Divine Child. Because of Him, every wood is a sanctuary; every tree is a shrine; and every star is a Star of Bethlehem.

The course of Nature is virtuous; and our Christmas festival should speak her sanity and her temperance. The breath of the woods is ever the breath of continence, of wholesome joy, of childlike gladness, of sane and happy worship. True adoration is always a thing of the heart alone. And where else can the heart come closer to God than in the temples of the forest that He has made? Make Christmas an outdoor festival! Surely it had distinctly rural origins: the shepherds, the Star, the angelic song out of the beautiful lonely sky—"no room at the inn." These things are, indeed, symbolized with Christmas greens and Christmas trees; but in addition some part of that holy day should be spent in the open, in quiet meditation, communing with Mother Nature, conscious through every sense of, and grateful for, the loving and affluent generosity of God.

All about me in my Christmas forest the woods withdrew magically. On every hand were gleaming aisles, mystic arras marginal to wonder, dim corridors, lordly transepts, fabulous vistas into the abode of silent beauty. All was as hushed as in a mighty cathedral just before the beginning of some splendid burst of music. And damp fragrances there were from dewy pine, from late hickory leaves just fallen, from the burly bark of the hale trees themselves.



Like a maned sea-breaker, sunset rolls up gorgeously in the west. All the lovely vale is suffused with ruby and amethyst lights, tinging even the dead leaves with a soft and joyous radiance.

Here in this aromatic solitude, far from man, but close to God, one finds the real spirit of Christmas; here in the scented, cloistered wood,—His mountains, His valley, His forest.

Sundown finds me still in my Christmas forest. Like a maned seabreaker, sunset rolls up gorgeously in the West. All the beautiful lonely vale is suffused with ruby and amethyst lights, tinging even the dead leaves with a soft and joyous radiance. A sense of brooding love, of Universal Compassion, holds all the earth in the tremulous ecstasy of an immortal dream. We are filled with a sense of the boundless mercy of God—through Nature—our nearest approach to Him. In the Christmas wildwoods is shed the tawdry cap-and-bells of the world, and here we don the simple garb of spiritual contentment. In the Christmas forest we find God, and communion with Christ. The Christmas woods ring with the glorious message of Peace on Earth, Good Will to Men.

A STIRRING, HUMAN ACCOUNT OF FLAMES,
CYCLONE DRIVEN, WHICH MADE FOREST
FIRE HISTORY IN MONTANA AND IDAHO
DURING 1931, WHEN HIGH TEMPERATURES
AND LOW HUMIDITIES TURNED NATIONAL
FORESTS INTO GREAT TINDER BOXES.



The Red Drama of

▲ ▲ ▲ By

PICTURE, if you can, a forest area of nearly two million acres rougher and more rugged, on the whole, than any timbered area in the continental United States. Over three-quarters of this, much of it National

Forest land, interspersed with great virgin trees, envision down logs, dead trees and slash from logging operations so jungled that one can scarcely make his way through. Eliminate any dream of a system of transportation—save,



After the smoke of battle had cleared, the Priest River Country bared its smouldering scars.



TWENTY-ONE NEW FIRES EACH DAY FOR
SEVENTY-TWO CONSECUTIVE DAYS—HEROIC
MEASURES OF ORGANIZED CONTROL—ONE
LIFE GIVEN FOR EVERY HUNDRED MILES
OF FIRE LINE BUILT—FLAMING CYCLONES
SPREADING DESTRUCTION FOR MILES.

America's Inland Empire

R. F. Hammatt

perhaps, for a few miles of dirt or graveled roadways over which automobiles and trucks can travel at ten miles an hour, and several thousand miles of trail. Catch an occasional glimpse of a deer as it flashes up out of a canyon, or

a mountain lion poised on padded feet. Hear, if you are so fortunate, the drum of the ruffed grouse or the hooting of his blue brother. Picture all of this and you can accept Montana and northern Idaho as it appeared on June 30.



Nearly 2,000 men flung their strength against the fire here which burned for six weeks.

But seventy-two days later the picture had changed, and a new and grim chapter had been written in the annals of forest fire. And this fire history—for it was made and remade—was recorded in the face of conditions unparalleled throughout the years of organized forest-fire protection and suppression on the National Forests. For sixty-five days of the seventy-two, high temperatures and low humidities prevailed. There existed a moisture content in duff, slash and down logs of less than ten per cent—for seven days little more than three per cent. Greater dryness than this seems inconceivable in a climate that permits forest growth. And over, around and through this great tinder box the wind attained a velocity of forty miles an hour, and seldom less than thirteen during daylight hours, six days out of the week.

The official record of the United States Forest Service shows that in those seventy-two days 1,537 fires—more than twenty-one each day—were fought to a standstill over a territory in Montana and northern Idaho larger than the combined areas of Massachusetts, Rhode Island, New Jersey, Delaware, Vermont, and New Hampshire. More than 170,000 acres were swept by the wind-driven flames. It required 1,275 miles of fire line to surround these fires—enough to reach from Augusta, Maine, to Jacksonville, Florida. And the trail was marked by death—one life was given for every hundred miles of fire line built. Two hundred people were left destitute when fifty ranches were wiped out, and hundreds of others were forced to abandon their homes. State troops were called out to assist the Red Cross and the Salvation Army in caring for these refugees. The eleven dead—fallen soldiers of the forest—gave their lives on widely scattered fronts. Five fighters were struck down by burning trees and limbs. One was hurled to his death when a bus loaded with twenty men went over an embankment. Another was crushed by a huge rock. Saddest of all was the death of five fighters at one time, for, had they obeyed orders, they would not have perished.

It happened on the Waldron fire in the Lewis and Clark National Forest in Montana, east of the Continental Divide

on headwaters of the Teton River. One hundred men were on the line, divided into crews of twenty-five, with experienced timekeepers, foremen and forest officers. The fight was terrific, but planned so that a quick retreat, should the wind whip the fire into a fury, might be made safely.

It came, with astonishing suddenness. "Beat it, boys!" was the forest officer's order. "Follow the contour into the old burn." The order was obeyed, the old burn reached, and the fire rushed past with a terrifying hissing sound. But five men were missing. Later, when their bodies were found, it was quite evident that they had disregarded the order and followed their own ideas about escape. They never had a chance for life after that.

Perhaps never before, in the Northwest at least, had wind been so treacherous to fire-fighters, that is, so continually treacherous. Throughout most

of the seventy-two days it raced at high speed through the flaming timberlands, erratic and disheartening. Its course was never certain and it was alive with "twisters," small cyclones that sucked up burning embers and for miles spewed them down on tinder-dry forests.

For instance, there was the Deer Creek fire, near Bonners Ferry in Idaho. The fire quickly swept through the headwaters of the Yaak River into

Montana and, driven by a terrific wind, burned out a path across the Canadian border, came back and crossed again. Several times this hurricane of fire was completely "licked." Early in its eventful career it was under control, mopped up, and watched by a small patrol for six days. Then on the afternoon of the seventh day a twister came in from nowhere. It was lazy at first but gathered speed and strength as it swept over the old burn. Unexpectedly it found a bit of live fire and with a roar carried it up into its vortex and dropped flaming torches for a distance of four miles. Immediately more than a hundred new fires broke out, and the Deer Creek fire moved on again toward Canada.

It was just such a twister that loosed the red demon on the beautiful Priest River Valley in northern Idaho. And in its pathway, all alone on Blondy Pardue's forest ranch, were his wife, their day-old baby and his aged mother.

It was eleven o'clock, one hot, dry August morning, when this particular fire started its rampage. Within an hour it was two miles long and a mile wide. In the early afternoon it was still racing on a front of five miles and a



Mrs. Alfred Jackson and her family ran a mile through the fire to save their lives after giving up their car to save a neighbor and her one-day old baby. Right, are the children of Edward Dailey,—buried in a potato patch one night while the flames swirled over them.



length of fifteen. By nightfall, when the wind dropped, it had destroyed thirty-four ranches, blocked two highways with burning timber, and trapped a hundred people.

When the fire started, Blondy, with other farmers from neighboring ranches, was working in the peaceful little town of Priest River. By midafternoon, dropping everything, he joined the scout crews sent out by the Forest Service from Newport. As these crews cleared the main highways, trucks bearing fire-fighters, tools, and provisions rushed through.

Just before dusk of that long summer day the air patrol roared overhead. Shooting through billows of smoke, it scouted the fire and mapped its course. Crossing and re-

"if it hadn't been for Marvin Jackson, a ten-year-old boy. He cranked the engine, showed us where to go, and with his bare hands beat out the sparks that showered the blanket protecting baby and me. He is a real hero."

So were Marvin's mother and his eighteen-year-old sister, Lavina. They gave up their car—their only means of transportation—in order that Mrs. Pardue and her baby might be saved. They could travel on foot, if need be. And they did—to Priest River, a mile away, leaving their home in flames.

The night wore on, and more roads were cleared. Sector bosses, gathered from far and near, established camps and deployed their men. Plans, determined upon as a result of



Never a day went by without new fires—and men and mules were always on the trail.

crossing the flame-swept area, it swooped dangerously close to the ground indicating by the course of its flight the way to head the flames. Then it returned to Newport and its pilot reported to the waiting sector bosses the location and course of the fire.

With the leading rescue crew that hacked and chopped its way toward the seemingly doomed people of the peninsular country was Blondy. Crazy with fear for the safety of his little family, he savagely attacked the fallen trees that barred his progress. Suddenly he caught the knocking of a motor and an old, dilapidated car appeared. For a moment Blondy stood rooted to the spot, but then, recognizing his wife and day-old baby, he sprang forward with joy.

"We would have been burned to death," sobbed his wife,

air-patrol maps and reports, were put into execution. By midnight 700 men were attacking the fire. By noon the following day their number had been augmented by 1,500.

All through the night refugees plodded their weary way over dusty roads to the town of Priest River, where kindly neighbors opened their doors and provided food, shelter and clothing. Morning of the second day dawned with the sun struggling through a heavy pall of smoke. Many were the anxious moments as husbands searched for wives, mothers for children. Many questions were asked, many answers sought.

It was two days later before Edward Dailey, his wife and two children staggered into Priest River. They told of a harrowing experience, and a truly miraculous escape.

"I'm no coward," Dailey related from his white hospital cot, "but I wouldn't live those last few days over again for all the money in the world. I was working around the ranch when I first saw the smoke, but didn't realize what a terrible fire it was going to be. The flames ran so quickly and spotted so far ahead of the main fire that before I knew it the ranch was surrounded. I thought we were gone for sure. I yelled to my wife to get the children and run for it. Where, I did not know. Then suddenly I had an idea—the potato patch in the middle of the clearing. I ran to the blazing barn for a shovel and some sacks, and on to the potato patch. Frantically I dug trenches and in these placed my wife and children. As the heat became unbearable, I covered them with dirt right up to their chins, and laid sacks soaked in water from the irrigating ditch over their faces so they could breathe without getting smoke in their lungs. It seemed like burying them alive, but it was our only chance. Then I crawled into a trench and pulled the dirt over me.

"The heat was awful. Twisters shot flame hundreds of feet into the air and hurled blazing trees around like straws. None of them hit us, thank God. We stayed in the trenches all through the night—a night none of us will ever forget. At daylight we crawled out, cooled our faces in the ditch and walked over to Fire Camp 11."

It required five days for 1,500 men to corral that fire. It was six weeks before the ninety miles of fire line around the conflagration held it absolutely safe.

Hats off to those 1,500 men who fought the Priest River fire! Gathered hastily from the army of the unemployed, they were rushed through the dark into a new country, confronted, many of them, with a new and untried job under leaders they had never seen before. But not one of them quit.

Hats off, too, to the organizing ability responsibility for plans, training and infinite detail; hats off to the cool judgment and stamina of the leaders who, welded into a smooth-

working organization, made the winning of that fight possible. The building of 1,275 miles of trail was by no means the only problem of fire control. Far from it, for every foot built must be held for days and for weeks against the enemy. How well that job was done is shown in the official record that nine-tenths of the total fires were kept within an area of less than ten acres each. This is a worthy achievement, for during the summer of 1931 practically every fire was potentially a Priest River fire—each one a real threat to thousands of acres of green and growing forest.

Never a day went by without new fires. There were days the number was far below the average, but such lulls were always followed by storms, with lightning flashing from peak to peak. One storm started 150 fires—the Lolo National Forest in western Montana getting seventy-seven of them.

It was after such a storm that the Forest Service had its first airplane stowaway. Lightning had started fires in the Idaho National Forest, on the Salmon River drainage. They were so numerous and so widely scattered that smokechasers, on the scene, must have help. The country was uninhabited and inaccessible. Four days were required to get reinforcements to it over the trails.

Airplanes were the obvious answer. A call for help was telephoned the regional fire desk in Missoula at one o'clock in the morning. Immediately Pilot Nick Mamer, of Spokane, was called over long-distance.

"Hello, Nick," the fire desk greeted the airman, "The Idaho wants help. Lightning fires. There'll be twenty-four men with

beds, tools and three-day rations to go to the emergency landing field at Chamberlain Basin first thing in the morning. They'll be waiting for you at Clarkston at 4:30. Wilson will be at Chamberlain to lead the men from there.

"What's that? Go on, it's only two now. Of course you can make it. But listen, take one load of men first, 'cause the pack train can't get to Chamberlain from up country till about nine o'clock. All right! Good luck, then."

At 4:30 Nick eased his ship down at Clarkston. All was in readiness. "Twelve men first," was Nick's order to the foreman. "And see that every man has his time-slip."

A few moments later the ship rolled down the field and into the night. In three hours it was back at Clarkston with its human cargo.

"Couldn't find the damn place," was Nick's terse summary of the flight, "Too much smoke. Give her more gas



When a "flaming" cyclone sprayed the beautiful Priest River Valley in Idaho with fire, a land rich in wild life passed to ashes. The deer shown below is one of hundreds that perished. Above, is one of the 600 chickens that were burned when a single valley ranch was consumed.

and we'll try again." Once more the ship took off, and this time made its objective. "Pile out," Nick ordered, and turning to the waiting Wilson, "Twelve men. Tools and grub next."

"Twelve?" Wilson counted, "You've brought thirteen."

It was true. Thirteen men had stepped from the cabin as the ship landed. One, with no time-slip, was the stowaway. And before he got through with that series of fires he was a wiser and sadder man.

The airplane proved its worth in forest-fire control this summer in Montana and northern Idaho. In transporting small crews quickly it was invaluable, saving hours and days, and consequently thousands of acres of forests. Adequate overhead, often from widely scattered sources, could not have been assembled without planes in time to function during the first or second work periods on large fires involving a thousand or more men.

And with trained observers in the cockpits its help has been beyond measure. Not only does the observer discover and report fires in country "blind" to the lookouts, but he maps, with unbelievable accuracy, the course of large fires and the progress being made by the fighters. Many a fire camp has been saved, many a fight won as a result of daring aerial work.

But speed was not confined to the movement of men and equipment by air during the fire season of 1931. Far from it, for speed—in thought and action—characterized the entire organization. Smokechasers, lookouts, guards, rangers and supervisors all were imbued with that spirit of well-considered, orderly speed that saved minutes, hours, days on each of the 1,537 fires on which it functioned. The same was true of the fire desk, overhead, central warehouse, labor supply and remount depot.

Here's one case—typical of the careful planning and organization, completed months before the season began. The scene was the fire desk at Missoula and the call was for four strings—forty mules with packers and equipment—plus tools, beds and other implements which, of itself, made another carload. The date was July 22, time about midnight, with the fire 350 miles away.

The fire desk was on the telephone. "Hello! Remount? Here's a little order for four strings with packers. We'll order a special with two express cars for the Huson siding. It'll run your stock into Missoula and attach the cars

to No. 6. The fire's somewhere back of Gardiner and the boys are yelling for help, quick. You'll make it? Great!"

Remount made it. One string came from the corrals; three others—twenty-seven mules and three saddle mares—the cowboys rounded up "in the dark of the moon" from a 640-acre side-hill pasture. A six-mile truck haul and at 2:50 a.m.—two hours and fifteen minutes elapsed time—forty head of stock were loaded at Huson.

The special train took them to Missoula. Traveling as express, the mules were routed to Livingston. From there to Gardiner they went special again. At Gardiner the trucks were waiting, and mules, tools and equipment were transferred and wheeled up the road to the point nearest the fire. From there, the real pack job began. But they

made it—and on time.

In the meantime the fire desk was busy. Before nine o'clock that morning it had made all arrangements for shipment of one twenty-five-man outfit—tools, equipment, bedding and rations for three days—to the Silver Lake fire on the Deerlodge National Forest, had located and dispatched two experienced foremen to the Beaverhead, and a twenty-five-man crew and plow unit to the Flat-



Moving up. Scenes reminiscent of Flanders were enacted when the great Army of the Forest went into action. Here are shown mules being rushed to the front for pack train duty in the very shadows of towering flames.

head Indian Reservation. It had furnished to the Helena National Forest equipment to replace that in use at a fire ten miles south of Montana's capital city, and had figured time schedules and issued orders which resulted in the assemblage of nine picked men from five separate forests, men of unquestioned ability who were to act as overhead on a fire which had blown up in a far-distant section of Montana.

Look in for a moment at Heron, Montana, where was located the base camp for the McPherson fire on the Coeur d'Alene and Cabinet National Forests.

Heron is a little place—a depot and a school, one small general merchandise store, an empty saloon and a few houses strung along the highway that leads westward through Clarks Fork and Sandpoint to Spokane, Washington. Below and above, along the river, were scattered ranches. Behind, roared Elk Creek with a fourteen-mile, one-way "motorway" with switchbacks around which even passenger cars often back to make the turns. And grades so steep that small trucks—nothing over three-ton capacity could make the top—must labor for eight of the fourteen

miles in low to pull the hill. At the head of Elk Creek the fire threatened ranches and towns.

There was only one well in Heron, a community well beside which has been established the open-air kitchen and rough, board table for the base-camp fire crew. And across the tracks from this well, in the old saloon, was base camp headquarters.

Five days after the camp had been established 1,200 men were assembled, transshipped from train and bus to small trucks and sent up that one-way road. With them had come shovels, axes, mattocks, Pulaskis, crosscut saws, falling wedges—tools of the fire-fighter. Food, too, came up that one-way road, and equipment—1,200 kapok beds, five power pumps with gasoline for fuel, three plow units complete, 4,000 feet of canvas hose, twenty miles of emergency wire and eleven telephones with batteries and ground rods complete. And hay and oats, by the ton, came for the 160 head of mules which were to distribute all of this, and more, to the eleven camps beyond the road.

"Eleven o'clock," mused the camp boss, leaning back luxuriously in his borrowed chair. "Orders placed with Spokane warehouse and the first truck back down from the hill. Jimmy," turning to his assistant, "get word to the road crew to widen out that third switchback on the hill, and fix the pipe on the water trough so that trucks can get a drink at the turn-out. Better get two or three loads of hay and a couple of tons of oats from Clarks Fork this afternoon, and send them up so the road'll be clear for the night run.

"We'll be having 1,200 loaves of bread beginning today instead of 800, and we've got fifteen hindquarters of beef coming. I'm getting a bite to eat," he concluded, "then turning in. Call me at three o'clock and don't let anybody know where I am—unless hell breaks loose."

One o'clock came. Trucks were on the road with hay and grain. Jimmy acknowledged the daily weather forecast and telephoned it to the various camps where it was received with relief, for there was predicted higher humidity with light westerly winds—a break at last. He had just completed this when the telephone rang.

"Heron Base Camp. What's wanted?" was Jimmy's query.

"Another little order for Divide Camp," was the reply. "Shoot us twenty cartons of Luckies, twenty Chesterfields and ten Camels; fifty dozen pairs of wool socks, size eleven; eight cotton overshirts, size seventeen, two size sixteen; fifteen pairs of cheap cotton gloves; ten boxes of Hungarian nails, and lots of snoose for the Swedes. That's commissary. Charge it to Divide Camp, and I'll charge it to the men who get it.

"And say," the voice went on, "we're all out of eggs. Give us ten cases and a galvanized tank. Make the tank about twelve feet, six inches in diameter and four feet, six inches high. Can we have the eggs for supper?"

"Naw!" was Jimmy's reply, "you know darned well you can't. Some of that stuff'll have to come 100 miles from Spokane. Tell you what I'll do, though, I'll tell the warehouse to put a hen in the tank and she can be laying them eggs on the way out. That way you'll have them for breakfast, even if it is some job for a hen."

The order was placed. At nine o'clock that night commissary, tank and eggs were at Heron. By one the next morning they were on top of the hill and at four—breakfast time—the crew had its eggs and the mules were clustered around the tank, drinking their fill.

The fate of Jimmy's hen never has been reported—in the official records at least!

The "official" fire season closed with a bang! On Sunday, September 6, at noon, the wind fairly howled. Embers from a burning farmhouse were blown into dry grass. Fire ran to surrounding timber on Clear and Cedar Creeks on the Selway Forest where winds whipped it into the tops of a fine stand of trees. Four hours later the wind blew itself out and the fire dropped to the ground.

In the meantime six ranchers lost their homes as the main fire developed a perimeter of fifty-nine miles with twenty-six miles more on disconnected spot fires, mute evidence of the power of that gale.

The Selway organized and struck the fire. Overhead was dispatched from Missoula. Nine men flew to the scene, one other went by express truck from Spokane to take charge of five plow units. Forty-one miles of trench were constructed by Wednesday night. Back-pack crews were dispatched to search out and mop up all spot fires.

On the same Sunday, before the same winds, sparks from a big fire south of Salmon River set the country aflame between Sheep Creek and Elk Creek, on the Nezperce Forest.

The day also brought a bad fire to the Lolo Forest. On it a fire-fighter was badly injured by a falling tree. His recovery is doubtful, still. The Beaverhead was fighting one of its worst fires on this Sunday—one that started outside the forest and blew into Mill Creek. And Yellowstone National Park, with seventy-five men on the Fan Creek fire, was hard pressed. So the 1931 fire season "peaked" almost to the last day. Fall rains, beginning September 9, improved burning conditions and gave the fagged and worn forest officers and their weary army of fire-fighters a chance to concentrate on the larger blazes, and with the number of new fires reduced, the situation was quickly in hand.

Never before in the history of organized protection have burning conditions been worse than in 1931. Never in any "bad" year—1910, 1919, 1926, and 1929—has burned acreage been kept so low. Never before in any year has any organization, unaided by rain, brought fires so large under control.

FIRE SEASON CLOSES IN WESTERN NATIONAL FORESTS

With 584,000 acres burned over, the 1931 forest fire season definitely closed in the National Forests of the West on October 10, bringing to an end one of the worst years in the records of the Forest Service. The annual average for the previous five years of area burned on the federal timber lands is 594,000 acres.

According to the Forest Service, the National Forests of Montana and Idaho suffered the most from fire. In that region lack of moisture, high temperatures and bad wind movements can only be compared with the previous extremely difficult fire years of 1919, 1926 and 1929.

Rainfall, generally, was practically the same as the average of these three bad years, the Forest Service states, but the distribution was such that the month of August brought less rain than was recorded in August in any of the three comparable seasons. Average relative humidity was exactly the same as in the other three critical seasons, but the average maximum temperature was more dangerous.

The National Forests in the East, according to the Service, have so far had a very successful fire year in contrast with the unprecedented drought year of 1930. In these regions, however, a fall fire season normally begins about the time the hardwood leaves fall.

ANIMALS OF THE BIBLE

BY ALEXANDER SPRUNT, JR.



THE VISION OF SIMON PETER

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"And he saw heaven opened, and a certain vessel descending unto him, as it had been a great sheet knit at the four corners, and let down to the earth: wherein were all manner of fourfooted beasts of the earth, and wild beasts, and creeping things, and fowls of the air."—Acts x, 11, 12.

This wonderful conception of the vision was drawn by Franco Paolo Michetti, famous artist of Italy, who was born in 1851. That so many of the animals, birds and reptiles mentioned in the Bible could be brought together, grouped so harmoniously and presented with such strength and beauty as in this drawing, is a great tribute to his art.

BEHOLD now behemoth, . . . he eateth grass as an ox. . . . He moveth his tail like a cedar. . . . His bones are as strong pieces of brass. . . . He lieth under the shady trees, in the covert of the reed, and fens. . . . Behold, he drinketh up a river and hasteth not: he trusted that he can draw up Jordan into his mouth."

So does the Lord of Creation describe to his servant Job, one of the mightiest four-footed beasts of the earth! Contained in the fortieth chapter of that Old Testament character, we have this reference to what commentators agree in thinking is the hippopotamus, the largest of all animals mentioned in the Bible.

Even more than of birds, the natural history of the Scriptures makes mention of mammalian life. From the hippopotamus to the mouse, the largest to one of the smallest of animals, its pages are interspersed with numerous references, for, in all, there are at least fourteen hundred and sixty-five passages relating to them! Two hundred and twenty-

two of these refer simply to beasts in the abstract; the rest have reference to specific kinds and there are thirty-one species mentioned by name. Surely, here is something which might well arrest attention. In such a book as the Bible, dealing with things of far greater importance to mankind than natural history, it must be significant that animals are referred to well over a thousand times. Birds, reptiles, fish, and insects occupy considerable space, but they are all greatly outnumbered by the animals. And, as in other fields of nature, the scope of mammalogy in Holy Writ is exceedingly interesting to study.

It is not difficult to understand the importance attached to animals by the peoples of ancient times. As much as animals occupy our minds today, it is natural that they long ago took even higher rank in man's calculations. There was a time when to forget animals meant to forfeit one's life, for the constant battle between man and beast was so nearly a draw that the final issue almost seemed to hang in doubt. Well did those of bygone centuries know

that to venture from their homes unarmed was as much as their lives were worth, and the crude weapons then in existence were oftentimes unavailing even when used. Nevertheless, animal life was of paramount importance to them. More than anything else, the animals have furnished sustenance to man, and though the transition from the stone hatchet of the cave man to the modern abattoir is a vast one mechanically, the impelling motive is identical. The weaker must always feed the stronger, and though man in those days seemed weak enough compared to some of the mighty beasts, the former had the divine gift of reason, and reason, as ever, prevailed against brute strength.

Closely allied to food is clothing and here again animals have figured largely. For unknown years fur was man's sole clothing, and in those dimly distant eras, which history itself does not penetrate and in which man seems to have sunk to a level almost that of the beasts themselves, skins were worn by them both. The hides of the latter clothed the nakedness of the former.

Then came the day which saw man's success in training the animal to carry burdens and to carry himself. Just when that was, or the circumstances which surrounded it, we do not know. The circumstances would be interesting no doubt, but they are nonessential; the fact that animals carry us and our effects is knowledge which belongs to every schoolboy. True, the practice seems doomed in this twentieth century, this transformation to the rule of machinery, when even in the frozen regions of the poles we have airplanes now instead of dog teams. Despite machinery, mankind owes much to the camel, the horse and the dog. Without them, who would

have sufficient courage to say where we would be today in the scale of progress?

The Bible has something to say about all these important aids to civilization. In Genesis 3: 21 we find that the Lord Himself did "make coats of skins" and clothed those first parents of the human race in the Garden of Eden. Another reference to the wearing of skins as clothing is given in

Job 31: 20, which speaks of the fleece of sheep as a covering.

The taming of animals dates back to unknown antiquity. It was certainly a commonly accepted thing in Bible times and it was doubtless old then. The Apostle James makes mention of it in his Chapter 3: 7, saying: "Every kind of beasts, and of birds, and of serpents, and of things in the sea, is tamed, and hath been tamed of mankind." Surely the taming of animals must have reached an advanced stage in his day. The ready adaptability of animals in becoming accustomed to human rulership is mentioned by the prophet Isaiah in his first chapter and third verse, for there he says, "The ox knoweth about his owner, and the ass his master's crib."

In the days when the Children of Israel wandered through the wilderness, animals were used as a means of punishment, because of their disbelief and faithlessness. In Leviticus 26: 22 the Lord warns them that if they persist in departing from Him "I will also send wild beasts among you, which shall

rob you of your children, and destroy your cattle, and make you few in number." A like admonition is found in Deuteronomy 32: 24. Both Jeremiah and Ezekiel use warnings as to the inroads of beasts upon those who insisted on serving strange gods and provoking the wrath of Jehovah.

That humanity might not exalt its learning and accomplish-



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THE DREAMING EVE

"And the serpent said unto the woman, Ye shall not surely die."—Genesis iii, 4.

This beautiful study of The Garden of Eden was drawn by Walter Crane, who was born in England in 1845. The delicacy of his work and his striking studies are world famous. This, of Eve, dreaming against the Tree of Life, with many of the creatures of the Garden grouped about her, is typical of his style in the perfection of its finely detailed execution and smooth beauty.

ment on too high a pedestal the Preacher, in Ecclesiastes 3: 13, 19, says: "I said in mine heart concerning the estate of the sons of men, that God might manifest them, and that they might see that they themselves are beasts. For that which befalleth the sons of men befalleth beasts; even one thing befalleth them: as the one dieth, so dieth the other; yea, they have all but one breath; so that a man hath no preeminence above a beast: for all is vanity." Surely, here is something well calculated to take the conceit out of the most pompous!

Biblical writers have used animals to typify many things. Psalms 49: 20 says, regarding the wicked, "Man that is in honour, and understandeth not, is like the beasts that perish." Titus says in his book, Chapter 1, verse 12, that "One of themselves, even a prophet of their own, said, The Cretians are always liars, evil beasts, slow bellies." In II Peter, 2: 12, false teachers are likened to "natural brute beasts, made to be taken and destroyed." The antichrist mentioned in the Revelation is spoken of as a "beast."

And so it may readily be seen that Biblical writers laid considerable stress upon animals in a wide variety of ways. As instructive as these are and as much as may be learned from them, lack of space prevents further mention. The particular kinds of animals mentioned are of interest, the greatest number of specific references being to sheep. Counting mention of the lambs with the sheep, there are two hundred

and eighty; nearly as many referring to lambs as sheep, about half and half. In the times when a man's wealth was measured in his flocks and herds it is not surprising to note so many references. Shepherds and sheep in Palestine today are much as they were in Bible times and the numbers and importance of the animals now mean a great deal to dwellers in the Holy Land. Their value then; their white fleece and regard in which they were held by their owners have been used in the Bible to typify the righteous and Christ is often referred to as the Lamb.

Cattle and oxen claim second place, as they are mentioned two hundred and twenty times. This includes both wild and domestic species. As a staple of food and unit of wealth they ranked with sheep, goats and camels. There is nothing of striking importance in regard to their habits, and by far the greatest number of references simply connects them with their human owners. They were used in Old Testament times as burnt sacrifices to a very great degree.

Third, numerically, stands the horse, with one hundred and sixty-six. Bulking largely in the life of the ancients, the horse was highly thought of both in war and peace. Its preeminence in many ways over all other domestic animals is natural, and that it shares with the dog the distinction of having been called man's best friend of the animal kingdom has much foundation. Far below it, however, in times referred to, the dog does not seem to have claimed the ad-



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THE DISOBEDIENT PROPHET

"And when he was gone, a lion met him by the way and slew him."—I Kings xiii, 24.

In this striking group, Jean Leon Gerome, the famous French artist, born in 1841, pictures two of the animals mentioned most frequently in the Holy Scriptures,—the ass and the lion,—both important actors in this tragedy.

miration and regard of the ancients as much as in our days. A glowing tribute is paid the horse in Job 39:19, 25 and is well worth quoting. It says: "Hast thou given the horse strength? hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? the glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men. He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground in fierceness and rage; neither believeth he that it is the sound of the trumpet. He saith among the trumpets, Ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting." Here is an ancient account which many an old soldier may well take as a description of his own particular charger.

Goats, though having one hundred and fifty-nine references, are not mentioned with much favor. A common enough animal and useful, too, they labored under an opprobrium. It will be recalled that it was this species which was chosen by Moses, under God's direction, upon which to transfer the sins of the Children of Israel, and was then sent out from the camp, with ceremony, to wander about in the wilderness alone and desolate. Unbelievers are likened to goats, as set forth in the description of the last judgment, where the righteous are called sheep and are set on the Lord's right hand, while the wicked are termed goats and occupy the left side. The Lord is represented in the capacity of a shepherd "dividing the sheep from the goats"—in other words, the good from the bad.

Among the dangerous wild beasts the lion, of course, has the preponderance of mention. It is referred to one hundred and thirty times. They seem to have been one of the characteristic predatory animals of the country in those days, and must have caused enormous damage to live stock. It will be recalled that one of David's greatest feats was that of slaying, with his hands, a lion. Bears, wolves and leopards are the other big-game animals of the Bible, if such a term can be used. In the other types of such mammals, fallow deer, roebuck, chamois, bison, hart, fox and hare occupy mention to a small degree. The monkey tribe is noted in but two references to apes, these animals being parts of cargoes brought to King Solomon during the magnificence of his reign.

One of the most mysterious of animal references is that of the unicorn. Famed in song and story and adorning the

coat-of-arms of a great nation, this well-known figure has been accepted by thousands as being something decidedly concrete rather than a myth, but there is no real evidence that it is anything more than a product of imagination. The term unicorn is simply an unfortunate translation of the original manuscript in which the Greek word *monoceros* and the Hebrew *reem* are so interpreted. The idea of a single horn as implied in the Greek has induced commentators to regard the word as referring to the rhinoceros but the generally accepted opinion current among most students is the literal translation of the Hebrew which is "wild ox." This animal, also called the uri, agrees more exactly with the description of the beast in the Bible and is, almost beyond doubt, the unicorn. The latter is usually figured as having the body of a horse, the tail of a lion and a single long horn projecting from the forehead. It has laid fast hold on fancy and will probably continue to "exist" as much as any real mammals.

As in other eastern countries, the camel was prominent in Palestine and has lost but little of its importance in desert sections even today. Admirably adapted to a life in arid regions, they are widely used in times of peace and war, and the northern African tribes could not do well without these beasts at the present time. There are forty-three references to camels in the Bible and richly equipped beasts of their kind adorned the entourage of many a potentate. A full list of Bible animals together with the number of times they are mentioned follows:

Sheep, 280 times; cattle-oxen, 220; horse, 166; goat (wild—domestic), 159; lion, 130; ass (wild—domestic), 64; camel, 43; dog, 39; swine, 19; mule, 19; roebuck, 15; bear, 13; wolf, 12; fox, 9; unicorn (wild ox), 8; leopard, 8; badger, 7; hart, 7; whale, 6; dromedary, 4; fallow deer, 2; ape, 2; hare, 2; coney, 2; mouse, 2; chamois, 1; pygarg (bison), 1; mole, 1; weasel, 1; ferret, 1; behemoth (hippopotamus), 1.

Natural history in the Bible reaches its highest point, numerically at least, with the animals. Space is devoted to them to a greater degree by far than any form of lower life on the earth. Without them mankind could not have existed and we cannot see how even today we could survive long in spite of the marvels of twentieth-century genius. While they are much subordinated and certainly do not attract the attention they once did, animals are today, as they have always been, essential parts of the universe for which they were created.

WHAT IS THE SMARTEST THING YOUR DOG EVER DID?

ON PAGE 745 OF THIS ISSUE JAMES HAY, JR., CONCLUDES HIS VERY HUMAN SERIES OF DOG STORIES "THE SMARTEST THING MY DOG EVER DID". MANY READERS HAVE FOUND THESE TRUE STORIES SO APPEALING AND SO CLOSE TO EXPERIENCES WITH THEIR OWN DOGS THAT THEY HAVE WRITTEN "AMERICAN FORESTS" ASKING THAT THEY BE CONTINUED.

THIS INTEREST, NO DOUBT, ARISES FROM THE FACT THAT THE READERS HAVE SMART DOGS THAT DO SMART THINGS, AND THAT EACH ONE IS ALWAYS READY TO RECITE THE STORY. CONSEQUENTLY, THE EDITOR WILL TURN THIS FEATURE OF THE MAGAZINE OVER TO THE READERS, WHERE THEY MAY CARRY ON THE ANCIENT BOAST—"THE SMARTEST THING MY DOG EVER DID . . ."

FURTHERMORE, THERE WILL BE A REWARD FOR THESE STORIES—\$10 WILL BE PAID FOR EVERY ONE PUBLISHED. THE ONLY CONDITIONS ARE THAT THE STORIES MUST BE TRUE, NOT EXCEED 500 WORDS IN LENGTH, AND THAT PHOTOGRAPHS SHOULD ACCOMPANY THE MANUSCRIPT WHEN POSSIBLE. SEND ALL MANUSCRIPTS TO THE "SMARTEST DOG" EDITOR, "AMERICAN FORESTS," 1727 K STREET, N. W., WASHINGTON, D. C. SUFFICIENT POSTAGE SHOULD ACCOMPANY MANUSCRIPTS IF RETURN IS DESIRED.



Maryland State Department of Forestry

A fine stand of second growth Sweet Gum in an old field in Zekiah Swamp.

ZEKIAH SWAMP

By BISSELL BROOKE

TODAY when man, machinery and science combine to convert the resources of nature into eagerly sought-after dollars and cents, it seems more of a myth than a truth that there should remain untouched in the heart of Maryland a vast timber mine filled with a variety of aged trees, whose high value is said to make it a veritable gold mine. This fortune in forestry, which is only forty miles from Washington and sixty miles from Baltimore, is contained in the 5,100-acre tract of watered land known as Zekiah Swamp in the eastern part of Charles County. Access to this area, closed to man for centuries, has been brought close to realization by two years of drought. The absence of rainfall

has driven back the borders of the swamp and set the stage for its reclamation.

Zekiah's treasures do not consist only of thickly wooded forests that exist both above and below its surfaces. The absence of human civilization has made it a haven for wild life. Fox, raccoons, opossums, minks and otters abound there. Remnants of beaver dams have been found. And fishermen eagerly seek the outskirts of the swamp, rich in fresh water fish.

The beginning of Zekiah dates back to the founding of Charles County, one of the first in the State to be settled. Granted by Charles I of England to Cecilius Calvert, Lord



Maryland State Department of Forestry

In the mazes of the old swamp near Bryantown, where the assassin of Lincoln, fleeing from the scene of his crime, took refuge and remained hidden until his escape from Maryland was effected.

Baltimore, the county was organized in 1658, and although its present boundaries are said to be substantially the same as when originally established, the same cannot be said of Zekiah Swamp.

Like the little acorn that grew into a giant oak tree, this swamp evolved from a tiny stream in the northern part of the county. Later—it is not known exactly when—an unusually heavy rainfall caused the waters from the uplands of the southeastern corner of the neighboring county, Prince Georges, to drain down into this stream and overflow its banks. The stream continued to be deluged by the upland drainage, and thus became the swamp that has grown larger and larger each year as its waters gradually enveloped the surrounding lands.

Today Zekiah Swamp still takes its source in the same location. From the southeastern uplands around Brandywine the swamp stream flows southwest for fourteen miles through an extensive and beautiful valley, also named Zekiah. The main channel in the swamp proper averages about thirty feet in width and three feet in depth at Allen's Fresh, where the stream meets that of Gilbert Swamp and empties into the Wicomico River. At various places the main channel divides into smaller channels or tributaries, each of which is comparatively shallow. The width of the swamp varies from 1,000 feet to one mile. Its entire drainage basin is 106 square miles.

The fertile lands which have been submerged by the swamp stream account for the unusually rich soil of Zekiah. A considerable part of the swamp was originally dry and fertile land, much of which was developed into thriving plantations by the early settlers of southern Maryland. Throughout Zekiah Valley and not far from the muck of the swamp there still remain a few of the original houses, which are the only landmarks of a time when the valley echoed with the hallelujahs and swaying tunes of the negro spirituals sung by the slaves.

Remnants of dikes and ditches in various parts of the swamp indicate that man waged a vigorous but futile battle against nature. By the time of the Civil War the swamp had spread over a large area despite the dikes that had been thrown up and the drainage ditches. The war of man against man left little or no time to fight nature, however, and the growth of the swamp remained unretarded for several years, during which it expanded greatly.

Not long after the war the swamp attracted the attention of the American people when it was claimed that it had afforded cover and protection to J. Wilkes Booth, the murderer of Abraham Lincoln. After the assassination Booth set out from the Capital through Prince Georges County into Charles and along the swamp to Bryantown. The intense pain caused by his leg, which had been broken in escaping from the theatre, forced Booth to stop at this hamlet and have the broken member set by Doctor Samuel Mudd. After this Booth traveled down Zekiah Swamp to the plantation of Colonel Samuel Cox near Bel Alton. There he was befriended by one of the Colonel's tenants, Thomas Jones, who was instrumental in effecting the assassin's escape from Maryland.

The uncanny stillness and the slime of the soggy soil that prevail in Zekiah Swamp have failed to shut out romance. Not a few of the older residents of Charles County recall with a devil-may-care twinkle the secret trysting places of their youth in the gnarled old trees on the outer edge of the

swamp. And tales of the witches, elves, and goblins that inhabit and haunt the swamp still delight the younger folk of southern Maryland.

The swamp abounds in timber both above and below its surface. The tree growth above is characteristic of permanently wet conditions and includes such valuable hardwoods as birch, alder, willow, black gum, swamp maple, sweet gum, black ash, elm, haw, hornbeam and overcup oak. On the slightly drier parts bordering the uplands occur beech, pin oak, willow oak, cedar, holly, sycamore, white oak, white ash, scarlet oak, laurel oak, hickory and dogwood.

Buried in soggy, spongy, dark brown liquor of the main stream and tributaries are trees of white cedar, cypress, and countless thousands of the trees named, criss-crossed in every conceivable way. The wood is said to be as sound as the days when nature, decreeing that those trees had lived their allotted three score decades and then some, sent a crashing gale to lower the veterans of the forest to their watery grave. An examination of some of the water-covered timber during a recent visit to Zekiah Swamp has convinced Karl E. Pfeiffer, of the Maryland State Forestry Department, that when the wood is excavated it will be found in a condition of good preservation. Such timber is said to equal in strength and durability any that may be cut from the stand-

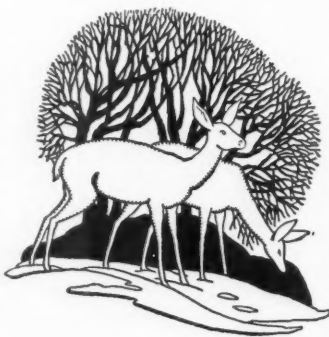
ing virgin forests today. Although plans have not been formulated as yet for the entire reclamation of the swamp by canal drainage, plans are being made to mine the buried timber. Finding the tree is not as simple as it may sound, for as one traverses the swamp today, he will not observe the slightest indications that somewhere beneath him are huge trees which have been buried for centuries. The loggers, or miners, will equip themselves with long sharpened poles with which they systematically prod into the soft ooze of the swamp. Not everything the pole may strike is a cypress, cedar, or one of the desired woods, but the miners are skilled in the "feel" of their

stick, and once they sense just the right rebound to their prod, and the right thud as the pole strikes the heavy bole of their sunken quarry, they immediately recognize their find.

The next problem is to determine the direction in which the tree lies, and finally, which is the butt end and which the crown. It must be remembered that when these trees fell, they did not assume a perfectly horizontal position, and occasionally they have a pitch of four or five degrees. In such instances, the roots are apt to be deeply buried in the swamp.

Having determined the "lay" of the tree, the miners select a convenient place above its bole, where they can easily dig away the surface debris. Then comes the most difficult part of the operation. It is usually impossible to take out the entire tree as there are almost always live trees growing immediately above the fallen one. Therefore, it is necessary to "buck up" the tree into short lengths. The size of the sections is generally governed by the use of the wood. The ooze and muck surrounding the tree does not usually offer much resistance, and the workmen have little difficulty in their sawing.

Mined timber brings high prices as it can be converted into a myriad of things necessary to man. It is with this thought in mind that the owners of Zekiah Swamp are anticipating handsome profits from their mining labors of a day soon to be.



Taming The Wild Ones

HOW I MADE FRIENDS WITH
SOME DENIZENS OF THE WOODS

By GEORGE D. PRATT

FOR about twenty years I have spent most of my summers at my camp in the woods of New Brunswick, Canada, thirty or more miles from the nearest house, where one can live close to nature and make friends with some of the wild creatures of the woods.

In 1914 a young bull moose came to the camp, shyly at first, but day after day he became tamer, until at last my boys were able to feed him from the camp porch. Harry, as we called the moose, appeared regularly day after day all that summer, and seemed to lose all fear and distrust of his human companions.

This past summer, however, we had an even more remarkable experience in taming some partridges, a mother and two chicks, who came regularly to our strawberry patch and had a fine time eating the fruit. As the strawberry patch had been pilfered so often by squirrels and robins, we had erected a wire fence around the bed to protect the fruit. These birds, however, were able to get inside the fence and feast on the berries.

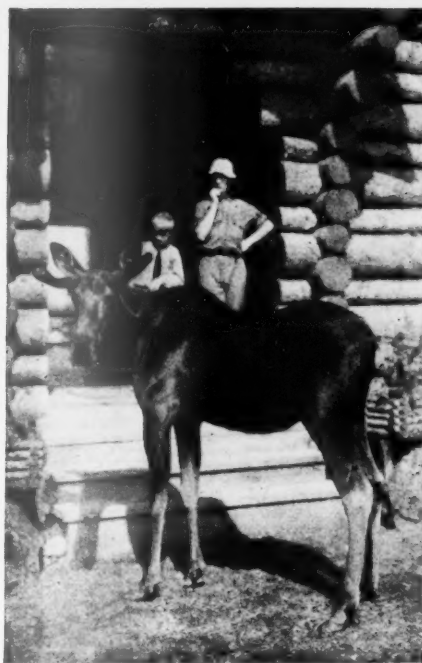
Early in the summer my friend Marshall McLean, who was visiting us, and I noticed a family of partridges, a mother and two chicks, who came regularly to our strawberry patch and had a fine time eating the fruit. As the strawberry patch had been pilfered so often by squirrels and robins, we had erected a wire fence around the bed to protect the fruit. These birds, however, were able to get inside the fence and feast on the berries.

One cold, drizzly day Mr. McLean found the two young partridges inside the fence, benumbed with cold, and unable to fly back to the mother bird who was on the outside. Mr. McLean lifted the two young birds and put them on the ground. The stronger one went to his parent and was warmed, but the weaker bird did not have the strength to get to her, and finally died of the cold. Whether or not it was because the birds were handled, I do not know, but from that day we saw no more of that particular group.

Two or three days afterward, however, another bird, with two young ones, appeared. We thought at first that she had adopted the chick of the other bird, but saw later that this was not the case. We encouraged the birds to visit us every day, enticing them with bread



But the greatest victory was when the partridges, shyest creatures of the woods, became so tame they took food right from my hand and even, when they felt so inclined, perched on my head.



Harry, the young bull moose that came voluntarily to our camp in the Canadian woods and who eventually became so tame that my boys fed him regularly from the porch.

crumbs. They were extremely shy, but finally screwed up courage to come near enough to eat the crumbs. The young birds were less fearful, and before the end of July they appeared on the lawn every morning, waiting for their meal. They would fly up on the chair where I was seated and eat from my hand.

The mother bird was harder to tame. She was very suspicious, but after a great deal of coaxing she finally consented to run up, snatch a piece of bread from our hands, and run away again. As the summer advanced, the birds became bolder and would even fly on my shoulders and head. The mother bird, too, grew more confident, and I finally succeeded in getting her to feed from my lap.

I did everything I could to make the birds feel at home and safe from harm. A cat on the place had been removed, as I feared she would try to kill the birds. Last week I received a report from my superintendent saying that in the first week of October ten partridges were seen on the lawn, and the caretaker there will feed them as long as they continue to come.



How Florida is Saving Her Holly

By F. L. HIGGINS

WHILE a good part of Christendom sings *Heigho, the Holly*, and continues to indulge in the time-honored custom of decorating for Yuletide festivities with gay holly branches, Florida remains apart, taking part in neither the singing nor the decorating. This, however, does not indicate a loss of reverence for the tree or the tradition. Rather, in Florida the holly has again become the "holy" tree, protected that it may not perish from the earth but endure as a heritage to men for all time.

A law, fostered by nature-lovers and conservationists, prohibits the purchase, sale, or picking of holly by persons other than the owners of the land on which it grows or those having their written permission. This protective legislation was necessitated by the serious depletion of the native growth due to commercial cutting for the Christmas trade. The law has been given very wide publicity, and in effect it renders the further cutting and wanton abuse of the tree tabu.

The prohibitory statute applies to Florida's two leading members of the celebrated holly family—the American and the Dahoon. Several minor species indigenous to the State, being less conspicuous and therefore less alluring to the vendors of Yuletide greens, have not the need of protection. In fact, some of them are being advocated as the substitutes that will help to save their less fortunate kin.

The American holly, *Ilex opaca*, is the same species that is found throughout the Eastern States as far north as Massachusetts—the bright-berried, glistening-leaved holly that all America knows and loves and uses lavishly. Though pronounced inferior to its English cousin of venerable tradition, it has suffered no slight in Christmas use through its demerits. Its beautiful white heart-wood has likewise been in great demand for cabinet purposes.

The Dahoon holly, *Ilex dahoon* or *cassine*, is a strictly southern species, ranging no farther north than Virginia.

It is a much smaller tree, and its dark, shining evergreen leaves are narrower, being toothed only at the tip or not at all. Its berries are dull red, sometimes inclining to yellow. Though still available in quantities in its native haunts, its too generous use of late years has moved the conservationists to action in its behalf.

It is not to be supposed, however, that conservation leaders are content to rest with the mere passage of the law. They realize that for its greatest effectiveness the cooperation of each and every citizen of the State is required. Too, they realize that it is their task to present a better, if not a more considerate way of celebration to the seemingly thoughtless people who have wrought the destruction of the past. They consider it their task to arouse a greater appreciation of floral treasures. Therefore they not only preach but practice a more extensive use of living Christmas trees and decorations. Each passing year sees more and more illuminated outdoor trees that need not be consigned to the ignominy of the garbage dump. Those who prefer a tree indoors are urged to choose a live one which may be set in the home grounds after its primary function is ended. Clubs and organizations are contributing and planting such trees for the use of schools, parks and public buildings, all of which become an integral part of the local Yuletide program. In this rôle pine, cedar, arbor vitae and Italian cypress are proving highly satisfactory.

A second constructive phase of the conservation program is the planting of decorative shrubs that rival the holly not only in beauty but in the display of traditional Christmas colors. Make the Christmas

landscape a flaming symphony in red and green, they preach, and the absence of the customary symbol of the season's cheer will be less noticeable and less lamented. To this end thousands of cuttings of the brilliant poinsettia are made annually and rooted in beautification projects. This is also true of the flaming hibiscus and Turks cap. The scarlet bougainvillea vine is another conspicuously garish



contribution to the season's floral cheer. The Brazilian pepper tree with its myriad gay coral berries stands in high favor as an effective substitute. All the while, however, the slow-growing but beloved holly is being given a place in parks and gardens, either as a shrub or a hedge plant.

What about those folk who cling more tenaciously to the older ways of celebration and still wish to use the traditional greenery within the home? Or what about those to whom the holly formerly provided an essential income? Has Florida no alternative for them? It has indeed—a wealth of broad-leaved evergreens and bright berries that may be used as lavishly as desired. With characteristic foresight the conservationists do not allow the process of substitution to end with mere idle suggestion, nor do they leave it altogether to individual initiative. Each year since the enactment of the law the use and sale of substitute greens has been actively fostered.

Through the home demonstration clubs in the State instruction in wreath-making has been given to hundreds of women. Some of them use the knowledge in the decoration of their own homes or in the preparation of gifts. Others apply it on a larger scale, finding a ready market for their product. The local garden clubs have likewise assisted in this most important phase of the conservation project.

Among the better-known foundations advocated and employed in the hollyless wreaths is the magnolia, common throughout the peninsula in both the wild and the cultivated state. Its shiny, dark green leaves may be gathered without detriment to the tree, and in artistic combination with bright red or yellow berries provides a truly festive decoration. Due to their stiff, leathery character they do not require the protective coating of shellac as do many of the lesser substitutes. Another handsome dark green leaf is furnished by the laurel cherry or mock orange.

Still another attractive foundation material existing in great abundance is the sweet bay, which sprouts up freely after fires and often forms dense thickets in the swampy regions of the State. Its stiff green leaves with their silvery

lining remain through the winter in this latitude as do also those of the red bay, kin of the tropical avocado, with their orange-colored midrib.

Other glossy evergreen leaves, broad and narrow, found suitable for wreath-making or the less formal types of indoor and outdoor decoration, are supplied by perhaps a score of native and naturalized trees. Many shrubs, vines and plants have proved available in one way or another, as

have weeds and grasses. Indeed, the list of attractive and easily accessible holly substitutes is surprisingly long and growing with each returning holiday season. Among them are ground oak, pittisporum, salt grass, monkey puzzle, wild fig, sago palm, banana, citrus, privet, milkweed, mulberry, oleander, cedar, croton, wild smilax, virburnum, jessamine, pepper and myrtle. For the most part these materials are used plain with a spray of clear shellac to prevent undue withering in overheated rooms. In some cases, however, they are bronzed or silvered according to the personal taste of the wreath-maker. Gay berries are wired on in quantities and combinations as desired. For the narrow-leaved evergreens a generous background of the native red or white cedar is recommended to properly heighten the effect when the berries are added. Either cedar or arbor vitae is usually employed.

Among the more conspicuously colored leaves contributed by Florida swamps and woodlands are the sweet gum, black gum, maple, and sassafras, sourwood, loblolly bay, oak and woodbine. Wherever available in sufficient quantities the

gay Brazilian pepper berries are a favorite. With the stiff, broad-leaved evergreens, however, nothing is more effective than the bright scarlet fruit of the wild love apple. To give a truly tropical touch to their handiwork the wreath-makers often add to the smaller berries clusters of ripe orange-colored kumquats, diminutive members of the citrus family.

Florida has seven or more native pines, which are used in their natural state or bronzed or silvered. Another striking decoration is provided by the Spanish moss, which is treated with a preparation giving it the semblance of snow.



The American holly, *Ilex opaca*, found throughout the Eastern States as far north as Massachusetts, the bright berried, glistening-leaved tree all America associates so closely with the Christmas season, and uses so lavishly in its celebration.



"Progress"

By

JACK TURNER



Act I

*In massed battalions, row on crowded row,
The tall trees stand. Among their lofty crests
Soft summer breezes sing, great storm winds blow,
And little birds in safety build their nests.
Fair is each quiet hill—each unstained stream—
Each crystal lake that gems the wilderness—
Fairer the trees that line the hills, and seem
Green guardians of a land of loveliness.*



Act II

*Comes progress to the woods and, in its train,
Death and destruction stalk across the land.
Through every glade the sharp steel rings amain
And tall trees crash to earth on every hand.
Raped are the valleys—ravished are the hills—
Fouled are the streams that once were pure as snow,
And down them, to the torture of the mills,
Tree corpses—mangled—lifeless—limbless—go.*





Act III



*A white sheet, smeared with headlines black as hell:
 Five columns wide that he who runs may read—
 "Thrice-married Movie Queen Has Tale to Tell!"
 "World Famous Judge Admits He Forged a Deed!"
 "Preacher Loots Funds and Flies With Doctor's Wife!"
 "Woman Slays Husband—Jury Sets Her Free!"
 "Gunman Tells Thrilling Story of His Life!"
 This—Gods, forgive us!—this was once a tree!*



Epilogue

*From the tall trees that clothe the quiet hills,
 By steel, and steam and torture of the mills,
 We make a scandal-blotted, ink-stained page
 That bleats the little doings of the age—
 Now (may the Gods of Progress pardon me!)
 I sometimes think that I prefer the tree.*



Britain's Rising Army of Trees

Timber Reserves That May Save the Nation in Its Next Crisis

By

ALMA CHESNUT

THE WORLD WAR taught Great Britain the unforgettable lesson that forests as well as soldiers and guns are needed for purposes of national defense. The government today is mobilizing a standing army of trees.

Isolated by submarine warfare from her foreign timber supply—normally she imports ninety-five per cent of the wood she uses—Great Britain sacrificed 400,000 acres of woodland during the war years to fill her barest needs. The shock and scare of this experience spurred her to a peacetime program of forestation that was both bold and impressive in its magnitude.

Before 1914 Great Britain had no forestry commission, no state forests and no forest policy. Today the mother country is moving resolutely toward the goal of a home reserve of standing timber "sufficient to meet the essential requirements of the nation over a limited period of three years in time of war or other national emergency."

It has been necessary to begin at the beginning, for, although for centuries the English have been among the foremost in arboriculture, economic forestry, until 1917, was little more than a phrase to them. To achieve the desired goal a dual program is in progress. It calls for the establishment of extensive state forests and for the preservation and improvement of existing woodlands in private ownership. While the first phase is the more spectacular, the importance of the second, in a country where ninety-seven per cent of the total woodland area is owned by individuals or corporate bodies, cannot be estimated lightly.

Bluntly, and the government frankly admits it, the failure of private effort will mean one of two things—a vast increase

of expenditure by the state or abandonment of the new policy of providing national protection against timber shortage in the event of another war. And the Forestry Commission has little assurance that private forestry is going to fill the breach.

As a people, the British appreciate trees. They view with horror the destruction of American forests. Their reverence for all growing things approaches that of the Japanese. From the moment of my arrival at Plymouth I sensed this, and during all of my travels, by bus, by rail and by automobile,

through the north and south of England, the feeling has been confirmed. The island is like a great park, lovingly tended and gay with flowers. Its gardens grow trees garnered from many distant climes.

Since the days of John Evelyn it has been the delight of landowners to collect and experiment with trees from all corners of the world. Side by side with the British oak, grows the *araucaria* (monkey puzzle) from south Chile,

Oregon's famous Douglas fir, the redwood of California, which the British call *Wellingtonia* after the Iron Duke, the Mediterranean cypress and many other celebrated exotics. Most Americans would be surprised to know that redwood "seedlings" growing here have reached a height of over one hundred feet and a girth of seventeen or eighteen feet.

The difference is that the British have grown trees only for the love of them and without a thought of converting them into gold. Forests Britain had, but they were really parks, shelters for game, with majestic trees widely spaced, lovely to look upon but not a resource to be managed for profit.



On the steep hillsides of Scotland the mother country is wisely writing national life insurance by planting trees. From the northernmost tip of Scotland to Lands End and the Strait of Dover, plantations are springing up, until today the islands are dotted with embryonic forests.

I doubt if even the average Britisher yet realizes the extent of the change in attitude that is taking place or the seriousness with which the government is attacking the problem of building state forests. But one hundred years from now, if the program is not too radically changed, the aspect of the islands will be altered greatly. Every available acre will be supporting dense collonnades of trees and home-grown timber will be competing with foreign brands in British markets.

A report, drawn up in 1917-18 by a subcommittee on forestry of the Reconstruction Committee, formed the basis on which the new program has been built. This subcommittee, which was headed by Sir Francis Acland, outlined an am-

years. The act provided that the Commission should be non-political in character, but with a representative in the House of Commons and planned its work in decades so as to assure continuity in its outlook and policy. Wisely, it stipulated that receipts from operations should be paid into the forestry fund and during the first ten years these amounted to nearly \$4,000,000.

From an American viewpoint the British forestry operations seem small scale until you consider that the total area of the United Kingdom, excluding north Ireland, where no planting has been done, is only 88,745 square miles, compared to our 3,026,721 square miles—an area, let us say, not quite so large as the States of New York and Pennsylvania



Britain's planting program is being pushed forward rapidly and aggressively. In this, the Inchnacardoch Nursery at Inverness, Scotland, 11,000,000 seedlings and 6,000,000 transplants, with a valuation of \$50,000, are growing.

bitious scheme to place the United Kingdom on a secure footing as far as timber production is concerned. It looked ahead eighty years and recommended the afforestation of 1,770,000 acres with conifers. A total of 1,180,000 acres was to be planted in the first forty years and 150,000 in the first decade. A year-to-year program of land acquisition and planting was set forth.

In 1919 the Forestry Commission came into being and one of its first steps was a detailed survey, completed in 1924, of Great Britain's timber resources. This showed that fellings had been even greater than early estimates had guessed and that the remaining woodlands, some 3,000,000 acres, mostly in private ownership, were poor in character.

The principal recommendations of the Acland Committee were embodied in the forestry act of 1919. A sum of £3,250,000 sterling (about \$17,500,000) was made available for the work of the Commission during the first ten

combined—and that the new state forests are being built for the most part out of nothing at all.

As a matter of fact, the task facing the commissioners was colossal. Not only was it necessary to acquire land and plant it but it was necessary to make grants to universities and colleges to provide teaching staffs qualified to turn out first-class forest officers. Research activities had to be organized; nurseries and experimental tracts established and the economics of the program carefully studied.

Handicaps considered, the record of the Commission during its first eleven years, though it did not quite achieve the goal set by the Acland Committee, merits the commendation of forestry enthusiasts everywhere.

The Acland program called for the acquisition of 442,000 acres of plantable land during the first eleven years. The Commission actually acquired 344,590 acres, of which 165,168 acrs were leased at a rate equivalent to forty

cents an acre. The remainder was purchased at a price averaging about thirteen dollars an acre.

The Acland program called for the planting of 175,000 acres of state forests in eleven years. The area actually planted totaled 163,000 acres, of which fifty-nine per cent were in England and Wales and forty-one per cent in Scotland. The cost of planting, not including overhead and supervision, averaged forty-six dollars an acre.

The Acland program called for 110,000 acres of state-aid planting. The Commission secured 83,438 acres, the financial assistance to the states being at the rate of ten dollars an acre for conifers and twenty dollars an acre for hardwoods planted and maintained as a forest crop.

From the Kyle of Tonge in the northernmost tip of Scotland to Lands End and the Strait of Dover plantation after plantation has sprung up until today the islands are literally dotted with embryo forests. Eighteen units at the end of 1920, fifty-eight by 1924, 137 by September, 1929, a total of 163,000 acres actually planted out by September, 1930. Thus Britain is building her forests.

She is building them upon the sand heaths of Dorset, Nottingham and Fife, upon the chalk downs in the south of England, upon hill grazing land in the west and south and the higher heather moors and rocky deer forests of Scotland. New forests are rising over devastated woodland and unproductive coppice. Tracts of 1,000 acres or more are preferred but occasionally smaller units, conveniently located, are purchased. New acquisitions increase their size and often the units run together as intervening lands are bought or leased.

Of the 163,000 acres afforested, over ninety-five per cent were planted to conifers. Softwoods grow faster and their timber is in greater demand. The Commissioners are using them to restore the woodlands depleted by the war, but, as opportunity presents itself, are also acquiring land suitable for the more exacting broadleaves and experimenting to improve methods of raising them. While transplants are most often used in afforestation work, in many cases both conifers, such as maritime pine, and hardwoods, such as oak, have been sown direct with excellent results.

The conifer forests have been planted preponderantly in Scots and Corsican pine, Japanese and European larch, Norway spruce and, from North America, Douglas fir and Sitka spruce. These two American trees grow well in the British Isles. There are Douglas fir trees here, planted in 1860, whose boles are already thicker than a man and that rise to a height well over one hundred feet. Some of the new plantations have already reached the thicket stage and are more than thirty feet high.

Probably the poorest type of land is represented in the extensive areas of sand dunes and heaths. The stout, native Scots pine and Corsican pine seem best adapted to them and some broadleaved species will grow on the better soils. On the thin, dry soil of the chalk downs, beech and ash are being set out. More than 76,000 acres of old woodland and coppice were purchased during the decade and, while this is good timberland, much of it has lain derelict for years and is expensive to afforest.

In the west and north of Britain most of the land consists of poor hill grazing and deer forest. Slopes covered with bracken, which indicates good soil depth and drainage, have

been planted to quick-growing species such as Douglas fir and the larches. The high heather moors, exposed to gales and with difficult soil conditions, call for trees that resist exposure and some success has been had in establishing spruces. They are difficult to plant in heather but experiments in plowing the moorland and cultivating the soil have raised the hope that the cost will not prove excessive.

Much of the hill grazing land consists of wet ground. When attention has been given to the question of drainage, the Norway and Sitka spruces take their stand, hardy and wind-firm. In drainage, too, lies the Commissioners' hope that the wet peat areas can be made productive. As for the deer forests, they represent a problem of their own for they lie in wild, mountainous country. In the lower stretches are heavy peat deposits, alternating with moraines. Much of the land is unsuitable for planting and the good areas have to be fenced. The timber they support is scarcely worthy of the name, most of it being extremely poor in character and without healthy reproduction.

Of actual land the Commissioners had a domain of 602,000 acres, acquired by purchase, long lease or feu, and transfer from the Crown. The transferred land is mostly old woodland, including intact the ancient Royal Forests, New Forest and Forest of the Dean. Most of the timber in these two tracts is second and third-class oak, but some of the other lands contain fine young plantations and some good timber.

Two methods of state aid have been tried. The first, a proceeds-sharing scheme, proved a failure. The second, a money-grant system (two pounds, or ten dollars an acre) resulted in the planting of 74,363 acres and the clearing of some 10,000 additional acres preparatory to setting out trees. In addition, an extensive program of education was carried on and technical information was made available to landowners.

While recognizing the many economic factors entering into the problem of private plantings, the government views the situation with growing alarm. Derelict forest land is easier to replant and is better suited for timber than bare heaths and mountains. The Commissioners, while withholding immediate action, have under advisement three plans to remedy the situation, all drastic and one tantamount to nationalization of unutilized forest land. Briefly, the first plan is increased state aid; the second, restriction on users of woodlands, such as state permission to fell or compulsory replantings, and the third, acquisition and replanting by the state of felled or derelict woodland.

Britain's phase of private forestry, which now threatens to go into eclipse, had its beginning in the middle of the eighteenth century when the growing demand for timber, principally for shipbuilding, turned the attention of landowners to an increased scale of planting. Up to the present period, except for a flurry in 1786, when the government decided to plant 100,000 acres to oak to supply the navy, the fate of British forestry was in private hands. Even the one venture of the state went to pot. The effort was pursued spasmodically and was almost completely dropped when wooden warships became obsolete.

Meanwhile the demand for timber had increased rapidly with the industrialization of the country, private forestry was unable to keep pace, and (Continuing on page 765)



"In the hall, the serf and vassal,
Held, that night, their Christmas wassail;
Many a carol, old and saintly,
Sang the minstrels and the waits."



The Fruit of The Tree

A Christmas Story

BY WILLIAM MERRIAM ROUSE

Illustrated by Eugene Cassady

ALL along the river road folks called Esau Unger meaner than quack grass and twice as aggravating. Quack grass just hogged the goodness out of the land and said nothing, but when Unger took what lay to his hand he made a noise about it, brazenly, and a jest of the victim. Unger knew these things that were said about him, and cared not. They were never said to his bristling beard, both because of his ruthless strength and his power in money, and it gave him covert satisfaction that men did not dare to speak their minds.

On the morning before Christmas Unger sat by the stove in his comfortable kitchen and worked a new pair of laces into the high rubber shoes that went on over his thick leggings of felt. It was just after breakfast and Martha Unger, worked lean and somewhat submissive by twenty years of Esau, moved from table to kitchen sink, clearing away the dishes. Esau knew, although she had not spoken, that there was something in her mind, seeking for words. He was ready to put a stop to it, for, to his thinking, almost anything that his wife might suggest would be foolishness.

"I'm going to chop on the spur of the mountain today," he said, after a time. "You might as well put me up some lunch—it's a waste of time to come back for a warm dinner."

"Yes, Esau."

Martha spoke in her most conciliating tones as she turned hurriedly from the dishes and began to prepare the lunch. Esau gave barely enough thought to her to realize that she was on the point of broaching some unwelcome subject. Working in a stiff new pair of leather laces was an important matter.

"Tomorrow's Christmas," said Martha in a voice that was a trifle strained.

"Uh-huh."

"The church folks in the village is planning to do quite a little this year."

"Then the fools ain't all dead yet."

He spoke calmly, but with the strength of a conviction that had been his until it had become part of his life.

"The women are a-going to try and give a Christmas tree to each one of the famblies around here that can't afford it." She hurried her words a little. "Some is going to furnish one thing, and some another."

"Encouraging shiftlessness," commented Esau as he stamped his feet into the rubber shoes.

"I thought mebbe I might be able to give a tree." She turned and faced him, unconsciously twisting up a bit of apron in her work-hardened fingers. "One of that little clump of young spruces up in the back pasture would do first class. They ain't good for nothing else."

Esau grunted and stood up. In spite of his contempt for Martha's notions these rare scenes were unpleasant to him. They made him feel as though his wife thought he was not a good provider. He knew that he was. Martha Unger never wanted for the best food and the warmest clothes.

"I need all them trees to make sled stakes out of," he said, shortly.

Martha's lip quivered. It irritated him that it should be necessary to say anything about the matter, but he waited for her to speak.

"It does seem as though you might spare one, Esau. I was figgering on fixing mine up for Nahum Phinney's fambly. His wife ain't well and they's six young'uns and I don't believe they've got more'n enough to eat, if they have that much."

"That good-for-nothing little runt!" Esau snorted out the words. "I hadn't ought to of rented him fifty acres last fall. The first quarter of rent is due today but he won't never be able to pay it, and if he don't—"

Esau paused abruptly as he put on his mackinaw jacket and took the lunch pail from his wife. He feared she would guess what he had left unsaid, and his fear was justified.

"It wouldn't seem jest Christian to turn him out of his house in this kind of weather, Esau," she protested.

Martha had stuck on the two subjects most powerful just then to stir Esau to wrath—Christian and Nahum Phinney. He turned, with his hand on the doorknob, and glared down from his six feet three of self-sufficient strength.

"Christian!" he grunted. "Tomfoolery! Your Christianity is like spoon vittles—mushy and soft for them that's too old or too young to eat reg'lar. It ain't for men and women; not if they've got any sense. Christmas and Christian and Nahum Phinney go together!"

"That don't make no difference!"



Martha had flared up at last. "The Phinneys is human critters jest like we be!"

"Human nuisances!"

He swung out of the house, his cap brushing the top of the doorway. He was too big to be deeply angry with a woman, but he was deeply disgusted. Every year at Christmas Martha was taken with notions more or less like this. He honestly tried to make allowance for her, and that was more than he did for any other living being.

Unger stopped at the woodshed and picked up an ax, curling two fingers around the very tip of the helve. Then he raised his arm slowly and held the ax out straight. There were few men in the township who could do that. Suddenly he lowered the ax and turned at the sound of footsteps, crunching over the hard snow. He was a little abashed that anyone should have caught him at his prideful display of strength, but when he saw the peaked face and the stooping shoulders of Nahum Phinney his embarrassment turned to anger.

Phinney came up and stood before him for all the world like a scared rabbit, Unger thought. He looked scornfully down at the smaller man, who was plainly suffering from the intense cold despite many wrappings of patched clothes. Phinney dispensed with the customary greetings and remarks about the weather.

"I come over to see about my rent, Mr. Unger," he said, nervously. "I sold my hay all right enough but they ain't come for it on account of the deep snow. Mebbe next week they can draw it and then I'll have a check that's jest as good as cash money. I'll turn it right over to you and I can cut wood enough to pay the rest inside of a month, certain sure!"

Although he had no leaning toward mercy Esau Unger reflected a moment before replying, for Mrs. Unger and Phinney together had stirred him to thought on a matter that ordinarily he would have settled mechanically. The world was full of Nahum Phinneys, never more than holding their own and often needing help. They were a drag on the strong.

"The rent is due today," said Unger. "If you can't pay it you'd better pack up and move tomorrow, like a man, instead of whining about it."

"But tomorrow's Christmas!" Phinney's eyes widened with growing apprehension.

"It's the twenty-fifth of December!" corrected Unger, grimly.

Phinney swallowed two or three times and fumbled his hands together before he went on.

"Little Emmy, one of my young'uns, is sick," he said, rather dragging the words. "She was getting kind of worse when I left home and it don't seem like it would be right for to make us get out and move with a sick young'un on Christmas."

It was the reiteration of Christmas that further hardened Unger. Otherwise he might have yielded a few days in order to be rid of the matter and get to work.

"I didn't make the young'un sick, did I?"

He threw the ax over his shoulder preparatory to moving away. "Tain't my fault you ain't more forehanded, is it?"

Phinney made Unger think more and more of a rabbit. Now, as he struggled with some inward difficulty, he looked like a rabbit that had just been shot.

"Won't you please—?"

"No!"

If Phinney had stood up and defied Esau Unger the little man would have been physically safe and he might possibly have won his case. It was not in Unger's code to strike a man smaller than himself, and he liked grit. But this weakness made his stomach turn.

"Why didn't you look ahead?" he demanded. "A feller that's renting a farm is a naturally shiftless cuss or he wouldn't be renting—he'd own the place. Why be I well fixed? Because I pay every dollar the day it's due! And I calc'late to make other folks do the same. I ain't asking no favors and I ain't giving none. Them's my principles!"

He wheeled sharply and walked away without once looking back. His mackinaw jacket was flapping open and he drew deep breaths of the air. To him the clear cold

was a stimulant and he wanted to breathe out the feeling that Christianity and Christmas and Nahum Phinney had raised in him. He ploughed upward through the snow that covered his fat acres to the foot of Old Roundtop, rising in somber grays and greens against the winter sky. Between him and the mountain there was understanding.

Unger halted at the base of one of the steep sides of the spur, covered with sturdy second and third-growth timber. He was chopping primarily for firewood but he planned to cut the ground over clean, selling the larger and better grown trunks for lumber. In a moment his jacket and mittens were off. Then, bracing himself at the foot of a young maple, he swung the ax in a long arc, with all the power of his taut muscles, and sent its blade deep into the body of the tree. The ax head bit in almost to the helve. Two skillful jerks tore it loose and again it came glittering down. This time thick chips flew and a clean, wedge-shaped cut appeared. A day's work was well begun.

A few minutes later the maple tottered and Unger stood aside as it went crashing down through the undergrowth. Dripping with sweat but breathing evenly, he took no rest. He worked up the slope, chopping out underbrush when he had to and sending tree after tree swaying mightily downward to await either the chains of the log team or the process of working up into four-foot lengths.

Well up the side of the spur there was an oak of considerable size, forking out in two branches not far from the base. The axman set himself to it with a certain zest in the conquering of its thickness but it was some time before he stood proudly back and looked at a deep notch scarring into the heart of the tree on the downhill side. On the upper side there was another and smaller notch, with its apex higher in the trunk. A few more well-placed blows, struck with a good arm, would bring the tree down.

Unger took a fresh grip and swung his ax. The first blow sent a quiver throughout the length of the oak. At the second there was an ominous snap and a chorus of little cracking noises. For the third time he drove his steel downward. Then came a mighty rending of wood and Unger, snapping the ax free, looked upward.

He saw death coming down upon him.

He had chopped, accurately enough, to fell the tree straight down the slope but one of the great branches had caught in the top of a smaller tree and swung the oak out of its course just as it tottered over. Unger sprang backward, and might have saved himself had it not been for the stump of a



little bush, no bigger than a man's finger, that he had lopped off not half an hour before. His foot caught; he tripped and fell and rolled over with the roar of the falling tree like an avalanche of sound against his ears. As the man's muscles tensed for a desperate spring it seemed that the heavens and earth thundered together. The breath went out of his body in one gasp.

Esau Unger, face downward in the snow, tried to rise and could not. On his back and loins there was a weight that mocked him. He twisted and wriggled, digging his bare hands into the snow, until he could turn his head and glance upward. The rough trunk of the oak loomed above; a little hollow in the ground had saved Unger's life. His body lay wedged into this depression by a weight that, given a few more inches to fall, would have crushed flesh and bones to pulp. He could move his legs and arms but otherwise he was held powerless, save that by great expense of strength he was able to lift his head and shoulders just a little way.

Unger was not hurt so far as

he could tell but at the end of a few seconds his feeling of relief passed.

It was no small matter to be pinned down by a tree.

His hands grew cold and it was only after considerable exertion that he drew them together and washed his stiffening fingers in snow. A sudden chill went through him and he remembered that a flannel shirt and undershirt were all his protection against a temperature well below zero. The heat of exercise had passed and sweat was congealing in his hair. Already there was a mound of ice along his beard. Grudgingly he admitted to himself that it was necessary to call for help, only to realize, with cold striking into his heart, that there was no one to hear.

The nearest house was Esau Unger's own, down on the river road, and beyond that lay the house that Phinney rented. The strongest voice could not reach to either of them from the mountainside. He had told Martha not to expect him for midday dinner. At best a searching party could not be expected until well into the evening and Unger knew that he would be frozen long before nightfall. He was no coward, but at the thought of death creeping slowly upon his helplessness he raised his voice and bellowed a call for help that went echoing away from the granite cliffs of Old Roundtop. Again and again he shouted and the echoes drifted back in feeble cries.

Unger was not beset by panic and after a little time he ceased to call out and began to struggle, for if there were any chance of getting free it behooved him to find it before his strength waned. Long since sensation had left his feet and now his fingers were growing numb. He raised himself, turtle-wise, and pulled and jerked at his cumbered body. The muscles knotted across his shoulders and he strained until faintness touched him, but it was all without result. He dropped back and lay panting with his face against the snow.

That desperate effort for freedom had taught the imprisoned man one thing. He could keep alive as long as he had strength to struggle, for the exercise had stirred his blood again. So he began to twist and squirm and in that way worked up a little glow of heat. It seemed to him that he had been rolling his head and working his arms for indefinite years when a dead branch cracked. Unger braced himself to the difficult task of lifting his head. Nahum Phinney was standing on snowshoes twenty feet away, watching his writhings.

For a brief time the men looked at each other in silence.

At first Unger was in a measure stunned by the shock of sudden deliverance, and then his heart misgave him that perhaps this was not deliverance after all. For Phinney did not speak nor stir. He stood and looked. Something of disinterestedness in his air chilled the man on the ground more than the cold. But although Unger was shaken he was not afraid and a part of his old contempt for Phinney returned.

"Get me out, man!" he ordered. "I'm almost froze! Can't you see what's happened?"

Nahum Phinney did not move. He continued to look down at Unger with blank, expressionless eyes.

"Little

Emmy's purty sick and I'm hurry-in' 'cross lots to the village after the doctor," he explained.

"Don't believe I got time to get you out, Mr. Unger. It would take quite a spell."

Esau Unger gasped with astonishment. He had never besought help of any man before; but never before had he been unable to help himself. For a moment he hardly knew what to say.

"You ain't going to leave me here?" he asked. "I'll die!"

"You knowed the tree was going to fall, didn't you?" Phinney looked almost accusing.

"Course I did,"

growled Unger. "It twisted 'round and then I stumbled over a cussed root."

"It ain't my fault you wa'n't more foresighted, is it? I didn't put the root there, did I?"

Suddenly Esau Unger realized that he was being mocked with words out of his own mouth, and by a little man whom he had mentally compared to a rabbit. He was not as angry as he might have been, for cold and dread had worn him down. Then, too, there was amazement at the failure of his own self-sufficiency. So it was not hard to speak calmly.

"You ain't mad about this morning, be you?" He made an attempt to laugh. "Well, the joke's on me, all right. You get me out of here and you can have all the time you want making that payment; say, two or three months, if you got to have it."

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Esau, face downward in the snow, tried to rise and could not. On his back and loins the weight of the great tree mocked him. Bracing himself to the effort of raising his head, he saw Nahum Phinney standing, calmly watching his writhings.

Pisgah Forest Aids the Unemployed

Asheville's Community Woodyard Demonstrates How the Forest Can Help Bring Relief to the Needy

By J. H. BUELL

"I WILL lift up mine eyes unto the hills."

And it was from the wooded hills that help came to the people of Asheville last winter when depression and unemployment brought despair to their community.

The mountains about the city have been a mecca of forestry activities since George Vanderbilt, more than thirty years ago, purchased a huge estate on the slopes of Mount Pisgah, and with the help of Pinchot and Schenck began some of the earliest silvicultural work to be done in this country. Today, the Vanderbilt holdings, stretching from Asheville on the north to the upper tributaries of the French Broad on the south, form part of the Pisgah National Forest, a thousand acres of which has been set aside as the Bent Creek Experimental Forest. The cove bottoms and ridge tops of this tract were originally cleared and cultivated, but the fields, long since abandoned, have come back to trees. On lands not cleared the best trees were cut for building and other farm timbers; the next best trees were converted into firewood; and the poorest were left, so that today the forests are suffering from past hard use. The rehabilitation of these decrepit stands was a problem that confronted the Bent Creek Experimental Forest.

During the previous summer a plan of forest thinning had been worked out and the merchantable trees offered for sale by the Pisgah National Forest. The foresters hoped that a lumberman would remove the unmerchantable trees in payment for those that would bring him profit. A farmer living near the forest did agree to clear cut a six-acre tract under this plan, but by the first of December no arrangement had been made for the other two areas. No one seemed interested in doing the work for what the merchantable timber would bring. It began to look as if the Station would have to hire the work done.

Then, on November 18, the biggest bank in Asheville failed. It was like the fall of the leader at the head of a

line of toy soldiers. One concern followed another into bankruptcy. Everywhere men were thrown out of work until, by the middle of December, 1,300 families in Buncombe County were applying to the charities for sustenance. A welfare committee was organized to handle the emergency. Some communities had attempted to meet the effects of the countrywide depression by establishing soup kitchens and bread lines but the Asheville Welfare Committee looked upon these measures as last resorts and in an effort to avoid them adopted the community woodyard idea.

The plan in brief was this: Men who applied to the charities for aid would be asked to work at cutting wood for the supplies they needed and the wood would be sold to pay for the supplies. Groceries for a family for a week would be paid for three days' work and no one would be allowed to work more than three days in any one week. The county agreed to loan trucks to haul the cordwood into town; the city offered its trucks to deliver the wood after it had been cut into stove lengths; and the Y. M. C. A. gave the use of its athletic field for a central woodyard and a

part of its building as an office. But the success of the plan depended upon finding a supply of standing timber near town which could be had free.

Now the Appalachian Forest Experiment Station had wood on the Bent Creek tract that needed cutting; the Welfare Committee wanted wood to cut. A bargain was made in which both parties gained. Here were silviculturists giving alms and the poor and needy



Not only is the Pisgah Forest furnishing jobs for the unemployed, but the work the men are doing results in great improvement to the woods. This is a view of a stand on the Bent Creek Forest after thinning, following an improvement cutting made by the workers of the community woodyard.

becoming silviculturists. On the 22d of December the first trees were felled. No one knew how the plan was going to work. Many of the workmen were unfamiliar with the woods; the felling crew lacked a leader, and since new crews and inexperienced men would be coming out every three days fear was felt that the forest would be damaged rather than benefited. Apparently the woodyard committee had an unexpected road-building problem, for the first truck

sent out to bring in cordwood became mired in the mud. It was such a discouraging beginning that the skeptical city and county officials were unwilling to lend their full cooperation until the practicality of the project was demonstrated.

But the woodyard committee never lost confidence in its plan. If roads must be built, they would build them. The Forest Experiment Station chose from among the laborers an experienced timber-faller and placed him in charge of all the work in the woods. This man organized his crews so that the best woodsmen felled the trees while the less experienced sawed them into sections and the wholly inexperienced men trimmed out the tops of the fallen trees. When great truckloads of eight-foot wood began to arrive regularly at the woodyard in the city, the city officials were convinced.

The community woodyard became an efficient and well-organized industry. At seven o'clock each morning a big truck left the post office in Asheville, headed for Bent Creek. It was packed with men—plumbers, mechanics, contractors, carpenters and even a few real woodsmen, but all needy. A year before all had worked happily at their own trades. Now hard times had made them glad to work as woodsmen for the bare necessities of life.

In the cold of a winter morning the men shivered and huddled together to keep warm, and as they shouted back and forth to each other to make themselves heard above the rumble of the truck, their white breath rose in the frosty air.

"Reckon any more banks have busted, Jim?"

"Naw, they ain't none left to bust. Couldn't do no more harm noway if they did."

The truck, not built for luxurious riding, bumped along for a half hour or so, then turned off the pavement to a Forest Service dirt road. Around a curve or two and it wallowed down into Bent Creek and grinding and groaning in low, pulled up into a field which years ago had been a garden patch, but which is now used on summer evenings by the foresters working at the laboratory as an archery field.

As soon as the truck halted, the men climbed down and began to collect their tools. Two of them built a fire, and



One of the big fellows falls.

when all had warmed themselves after the cold ride, they went to work. Half a dozen of the most experienced men formed the felling crews. Equipped with saws, which the old filer had sharpened the day before, they started up the skid trail into the woods. With them went the woods boss, followed by a number of choppers. Ten or a dozen men stayed behind and went to work on the great pile of tree

trunks and limbs which had already been hauled out of the woods. They sawed these up and gradually converted them into an orderly stack of eight-foot cordwood. The truck backed up to receive its load and three or four of the huskiest swung the sticks up to a man on the truck who stacked them in their proper niches. On the bank of the creek a rough table and benches had been built and near them a hole dug in the earth covered with sheet iron served as a stove. The black cook had already arranged the day's supply of bread and canned goods, and had his fire going with a big kettle of water over it. It was a busy scene.



Asheville community woodyard workers loading a truck with firewood at the Bent Creek Forest.

From the woods came the sound of falling trees. The woods boss walked up to an old spreading oak that was marked for cutting; it had to come down between two straight young trees without breaking them. He tested its lean, and noted which side of its crown was heaviest. Then, guided by the knowledge that only long experience in the woods can give, he made the undercut. The slanting cut from above met the level stump cut in an even line. The chopper placed the head of his ax hard against this line so that the handle pointed straight out from it. That was the way the tree would fall. He followed the direction with his eyes and noted the space between the two young trees.

"All right, George," he shouted, "when you and Charlie finish down there's one for you."

"We'll be up in a minute, we just got a couple of small sourwoods to get out of the way," came the reply.

The woods boss had time to pick out the next tree which should be felled and to get it notched for another crew by the time George and Charlie were ready to tackle the big oak. When he returned their saw was singing back and forth bringing out long shreds of sawdust low down on the tree trunk opposite the undercut.

"Pull hard over on your side, Charlie. We've got to leave enough on George's side to pull her over so's she'll miss that straight saplin'." The top began to sway a little. The boss looked up anxiously to see if it was coming down



A busy day at the woodyard in Asheville. When the wood is brought in on trucks from the forest, it is sawed into stove lengths by the community workers.

as he had planned. "Timber," he shouted, in a long-drawn-out wail. "Timber down the mountain! You boys trimming out the tops down there better get out the way, can't tell how far she's gona come."

A warning snap and the men sawed faster and faster. The cut began to open up—the tree was falling. One man grabbed the saw and both dashed to safety.

"Timber!" they both shouted.

With a great swish and a loud crash the tree fell straight between the two saplings, snapped from its stump and hit the ground below with a resounding thud. The boss smiled and the fallers were ready for the next tree.

The branches of the big oak were soon trimmed off and the trunk sawed up. A pair of mules driven by a shouting teamster came to drag the first section down to the pile at the bottom of the hill, where, in its turn, it would be sawed and split into regular eight-foot wood. Time passes quickly in the woods. The sense of mastery at seeing the trees fall

did not escape the workmen, and to it was added the satisfaction that they were earning their daily bread. The morning was soon gone. The frost had disappeared but there was still a cold zest in the air. Four or five times a truck piled high with wood had wallowed across the ford headed for Asheville.

At noon the cook hammered on an improvised gong, made of a four-foot length of railroad steel hung in a tree. The men flocked from the woods and lined up for their rations of hot beans, soup, and coffee. The teamsters watered their mules in the creek, then hung a nosebag over the head of each animal. For half an hour there was quiet. Then the

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Part of the active working crew skidding logs for firewood on the bank of Bent Creek.



EDITORIALS

Congress Ahead

EARLY next month the 72d Congress of the United States will convene for its long session. Not since the war has a National Assembly been confronted with so many difficult and complex questions. A nation torn by economic stress and human unrest will lay its problems upon the doorstep of our National Capitol and clamour for relief. There will be more than the usual number of half-baked bills and more than the usual amount of oratory for the benefit of constituents, but in the main Congress can be counted upon to act with intelligence and wisdom as it has in the seventy odd sessions that have gone before.

Faith in its representatives is the foundation of our governmental institution. It would be ridiculous, however, to say that Congress can do no wrong. Congress does at times pass ill-advised legislation. It not infrequently acts hastily. The danger of unwise legislation is greatest in just such sessions as will begin next month when the legislators will be under heavy fire from every field of political and economic affairs. It is likely that special groups will seek to take advantage of the situation to press legislation to their particular favor. It is likely that federal activities long established and recognized as public policies will be threatened with radical setbacks due to the pressure of questions of seemingly immediate urgency.

In this latter category comes federal forestry and conservation in general. By its long-term nature it is not clothed with the dramatic cloak of immediate urgency, although its firm continuity is as important to public and national welfare as any question with which Congress has to deal. Not in years has a session of Congress held out more uncertainly to the measured progress of federal forestry than the present one. Some of the issues affecting conservation likely to be injected into the session are discussed elsewhere in this issue. The need of balancing the federal budget is a paramount one, and according to the President calls for curtailment of federal expenditures. There is always the danger that the fiscal knife applied under strain and stress may cut too deeply and certain essential federal activities embarrassed to the point of disruption. If the need exists, federal forestry activities should bear their proportionate cut temporarily, but the forest policy of the United States, built through a quarter of a century upon a sound social and economic foundation, must be held intact. To this end, friends of conservation may well keep their eyes closely upon Congress and be prepared to meet aggressively any proposals that threaten to undermine or embarrass the continuity of the government's conservation work.

The Cigarette or the Match

ACCORDING to figures compiled by the United States Forest Service smokers are causing approximately twenty-two per cent of the forest fires recorded in this country each year. As an outdoor fire hazard, smoking now ranks first. A determination of the relative rating of cigars, cigarettes, pipes, and matches as causes of fire in the woods has never been made. Limited tests by the Bureau of Standards indicate that the discarded cigarette is a more deadly fire brand than the cigar by about forty to one. This may or may not apply generally to outdoor conditions, but it is safe to say that cigarettes and the matches used to light them cause by far the largest number of forest fires.

Whether the cigarette or the match is the greater hazard in the forest is a question still unanswered, although it is a timely one in view of the large percentage of fires attributed to smokers. Most foresters consulted believe that the match is a much greater hazard than the cigarette. Some place the ratio as high as five to one and feel that if the match hazard could be eliminated a great step would be made in forest fire protection. When it is realized that on the average some 170,000 cigarettes are discarded each minute of the twenty-four hours and that for every cigarette lighted in the outdoors probably not less than three matches

are struck, some idea of the potential hazard can be obtained.

It is not beyond the realm of possibility to eliminate or at least reduce very materially the match in outdoor smoking. As a matter of fact, there has recently been placed on the market a self-lighting cigarette that does away with the match. The lighting tip of the cigarette is made with a narrow band or collar on which is a composition whose base is hardwood flour. By scratching the band on the package in which the cigarettes come, the tobacco is ignited. The process seems particularly adapted to the outdoors in that the cigarette is easily lighted in the wind without sparks or apparent hazard and the company developing it is to be commended on its contribution towards reduction of the smokers' hazard. Although the general adoption of a self-lighting cigarette or a process that eliminates the match has its problems, nevertheless the general principle would seem to have great possibilities in reducing the smokers' hazard. Certainly the fact that more forest fires are started by smokers than by any other single agency would point to the need for aggressive research in determining the most dangerous sources of smokers' fires and dealing with them aggressively in the light of all facts and possibilities.

Trees and Unemployment

AMONG the many proposals advanced for the relief of unemployment, reforestation on a large scale is often mentioned. This suggestion usually comes from the layman rather than the forester, because the latter appreciates the limitations attached to tree planting as an immediate unemployment measure. There is ample land in the country in need of reforestation to give employment to a large percentage of the unemployed, but the practical difficulty arises from the fact that the planting stock is not available and that tree planting operations can be carried on only during relatively short periods in the fall and the spring. To grow the necessary stock for field planting would require two or three years, and it has been the practice of the nurseries to avoid growing stocks greatly in excess of what normally can be planted.

Nevertheless, there is merit in the idea. Undoubtedly there are nurseries with surplus stocks as a result of less private and commercial planting during the past year. Every planting project, however small, provides employment for local people during the fall and spring months. If the present depression continues for several years, there is time to expand nursery production. That in itself calls for labor. Even though unemployment is relieved before the additional planting stock becomes available, the surplus could be gradually disposed of to advantage.

Enlargement of nurseries would call for large amounts of trees, the collection of which would give employment to many persons. Seed collection time comes in the fall, but extracting and cleaning the seeds can be done during the winter months. Last winter the Chippewa National Forest at Cass

Lake paid cone pickers of the vicinity eight thousand dollars, and to those engaged in the extractory almost two thousand dollars more. In addition, the cone pickers sold twelve thousand dollars worth of cones and extracted seeds to the State of New York. This illustrates the sizeable community payroll that may be created by seed collecting activities.

It should be borne in mind also that tree planting is not the only way by which forestry is contributing to unemployment and can be made to contribute on a much larger scale. Elsewhere in this issue, J. H. Buell describes how the establishment of a woodyard at Asheville, North Carolina, last winter gave relief to some thirteen hundred families and at the same time made possible needed experimental cuttings on the Pisgah National Forest. The possibilities of woodyards and tree work in general in helping the idle are numerous. At the National Capital the Committee on Unemployment has just established a woodyard in the downtown section of the city, the wood to be supplied from needed thinnings at Arlington and other improvement cuttings on government property. In New Jersey last winter, a small community met its unemployment problem through a program of tree work which included a woodyard, a survey and mapping of all street trees in the city, and the trimming and repair of those in need of attention. Employment was thus given to idle men and at the same time the town was launched upon an up-to-date program of tree care and beautification. In every city such work is badly needed and if undertaken would give employment to thousands of men and would provide more beautiful and liveable communities. It would be money well spent by the cities.

Recreation and the National Forests

IT HAS frequently been pointed out in these pages that the recreation possibilities of the National Forests are not receiving the recognition or attention from Congress and the Bureau of the Budget that public interests merit. This view is confirmed by the increasing use of the National Forests by the public. Despite the effect of the depression upon travel generally, National Forests were resorted to last year by some 32,000,000 people—the largest number of record.

This impressive use of the public forests for camping, picnicking, hiking, and other forms of recreation close to nature is not a sudden fad. It has developed gradually and with significant increases year by year during the past decade. From a total of less than 5,000,000 visitors in 1920 the number has grown to 32,000,000 in 1930. Here is clear evidence that the National Forests offer the greatest single opportunity in the country for the general public to meet its need for outdoor recreation.

In years past the argument has been made that the National Forests were not created for recreation and that therefore their use for that purpose should be ignored, if not discouraged and frowned upon. The Forest Service has not pressed aggressively in Congress the fiscal needs of recreation, and Congress of its own volition has not provided appropriations in keeping with the rapidly growing use of the recreational resources of the forests. The result is that the Forest Service today finds itself seriously embarrassed in handling its millions of visitors, because it is without adequate funds to provide necessary camp grounds and sanitary facilities or to carry out a program of development. Its current appropriation for recreation is only \$67,000. This sum when spread over 150 National Forests provides allotments that are wholly insufficient especially for intensively used areas

where when lacking sanitary development there is always the danger of outbreaks of disease.

According to the Forest Service three times the funds now available for handling recreation on the National Forests are required to meet immediate and urgent needs. An additional \$100,000 should be provided for planning and development. This would seem to be a modest sum considering the tremendous public values, present and potential, represented by the recreational resources to be found in the National Forests. These values are both economic and social but do not lend themselves easily to evaluation in terms of dollars and cents. Nevertheless, as a public resource they are of very high worth, and if properly recognized and handled are subject to constant appreciation rather than depreciation. As a forest activity, however, recreation now stands as a sort of "Topsy" in the forest family. It has not been recognized by Congress as a forest resource in the same sense as forage, water power, and other natural attributes of forest land with the result that it has to shift pretty much for itself.

There is every sound reason why forest recreation should be given the place it merits in National Forest use and development. It is as subject to correlation with the major purposes of the forests as other secondary but important uses, and Congress should not delay longer in enacting fiscal authorization that will make readily possible the appropriations needed. The theory that ignoring the recreational resources of the forests will protect their major purposes of forest growth and watershed protection really defeats its own ends. The present situation and trends point to the fact that if the Forest Service is not provided with adequate authority and funds to control and plan the public's use of the forests for recreation, then indeed the major forest objectives may soon be seriously embarrassed and disrupted by uncontrollable numbers and demands of recreationists.

How Old Are The Live Oaks?

By

EDWIN LEWIS STEPHENS



I AM perplexed with conflicting evidence in regard to the probable age of the largest live oaks we have in Louisiana.

What shall we say of live oaks that measure eighteen feet, twenty-two feet, twenty-seven feet, and thirty-three feet in circumference? I have recently measured many large specimens, including the following: The two great live oaks in front of Colonel Boyd's residence on the old university campus in Baton Rouge, one of which measures eighteen feet, the other fourteen feet, in circumference; the great central live oak in the American graveyard in Natchitoches, seventeen feet, two inches; the large oak at the Protestant Cemetery in Lafayette, seventeen feet, six inches; the two trees on Twin Oaks Farm five miles north of Carencro, sixteen feet, one inch, and eighteen feet, three inches; the big oak in Broussard, eighteen feet; the G. A. Martin oak in Lafayette, eighteen feet, three inches; the



Surpassing them all in majestic beauty, grace and size, the live oak in St. Martin Parish measures thirty-three feet four inches in circumference. It is eighty-seven feet high and has a spread of 135 feet. This photograph was made September 28, 1930.

monarch of Paradise Grove at Breaux Bridge, nineteen feet, two inches; the one in Father Rochard's yard at Breaux Bridge, nineteen feet, eleven inches; the great live oak at the Lafayette Cathedral, nineteen feet, and the one in the Cathedral cemetery,

twenty feet, six inches; the curious series of oaks on the shell beach at Charenton standing ten feet above the ground on their roots, having been washed out by flood, now resting on mussel shells, the largest of which measures twenty feet, four inches; the oak on the grounds of the public school at New Iberia, twenty-one feet; the Gosserand Oak on False River, twenty-



The Gebert live oak, on beautiful Main Street in New Iberia, Louisiana. Its planting in 1831 is of authentic record. This magnificent tree stands directly on the main line of the old Spanish trail and is admired by thousands of tourists each year.



Among the most famous of Louisiana's live oaks is this veteran at Lafayette Cathedral, nineteen feet in circumference, photographed in June, 1928.

one foot, five inches; two neighboring oaks on Avery Island, twenty-one feet, three inches and twenty-one feet, seven inches; the great live oak on Avery Island, twenty-two feet; the one on Jefferson Island, twenty-two feet, two inches; the one at Kenner ferry, west bank, twenty-two feet, two inches; the Stonaker oak in Pointe Coupe Parish on the Mississippi River near New Roads, twenty-two feet, two inches (this oak is photographed in the April, 1930, number of the *National Geographic Magazine* as being in St. Francisville on the grounds of the high school, and much sentiment is wastefully indulged over the generations of children playing on its limbs!); the great whitewashed live oak on the southwest corner of the public square at Breaux Bridge, twenty-three feet, seven inches; the New Roads live oak on the grounds of the old Poydras College where James Ryder Randall wrote "Maryland, My Maryland," twenty-three feet, five inches; the great double tree east of the Teche at Parks, twenty-seven feet; the famous "Seven Sisters" on the Lastrapes place near Washington, in two clusters measuring approximately twenty-seven feet each; and finally the Arnaud Robert live oak six miles above Breaux Bridge, west of the Teche, thirty-three feet, five inches. This tree is eighty-seven feet high and has a spread of 135 feet. So far as I know it is the largest live oak in existence.

Now it is claimed for many of these oaks that their age is anywhere from 200 to 1,200 years! Mr. Edward A. McIlhenny informs me that the big live oak on Avery Island was

estimated to be between 1,100 and 1,200 years old by the great British botanist, the late Henry John Elwes, F.R.S. On the occasion some ten years ago when Elwes visited Avery Island, Mr. McIlhenny cut down for him a much smaller tree and made a cross section, which Elwes examined with a magnifying glass and found to have nearly a thousand annual rings. Mr. McIlhenny states that he himself recently counted the rings from the cross-section of a much smaller tree on the Island, showing 429 years of growth.

Mr. Frank E. Neelis, Superintendent of the Audubon Park Commission, New Orleans, writes me that the live oak trees in Audubon Park are from 200 to 300 years old. But obviously it goes without saying that no avenues of live oaks were planted at New Orleans previous to its founding by Bienville in 1718. Col. Thomas D. Boyd, President Emeritus of the

Louisiana State University, tells me of legends to the effect that the two great oaks in front of his house are hundreds of years old and date back to the time when Baton Rouge was the Indian village of Istrouma. But again one may exercise incredulity over the possibility of the Indians planting two trees mathematically located so as to be directly in front of the residence of the commanding officer of the United States Army Barracks erected years later at that point on the river bank.

How old a large individual live oak may be when it is so placed that the probability is in favor of its having been planted by Nature rather than by man, is a matter of con-



The Stonaker Oak, with a circumference of over twenty-two feet, stands in Pointe Coupe Parish on the Mississippi River near New Roads. This photograph was made in December, 1930.

jecture. The great live oaks in cemeteries may possibly have been standing at the time the cemetery was founded, but the reasonable probabilities are that cemetery live oaks are only a few years older than the cemetery itself. Therefore, since this country was settled only two centuries ago, we cannot expect to find trees planted by civilized men that are much over 200 years old.

Based upon measurements of many of the largest live oaks in Louisiana and upon exhaustive inquiries as to their age so far as it is known or can be fairly estimated, I have reached the conclusion that under ordinary conditions a live oak tree measuring seventeen feet in circumference at a distance of four feet above the ground is approximately 100 years old.

The typical example of observations from which this deduction is made is the Gebert live oak in New Iberia. This tree is the most conspicuous natural object to be seen by one driving through what may justly be called the most beautiful street in Louisiana, Main Street, New Iberia. The tree stands in the center of the walk in the front yard of the Gebert home. It is a beautiful sight. And situated as it is, directly on the main line of the old Spanish trail, it is the admiration of thousands of tourists each year. I photographed and measured it on October 15, 1930. Its circumference four feet above the ground was at that time exactly seventeen feet, the spread of its branches 105 feet. Its age is definitely known. The tree was set out by Mrs. Elizabeth Morse Marsh over the



This is the monarch of Paradise Woods, a grove of live oaks near Breaux Bridge, Louisiana, the mecca of artists because of its impressive beauty.

body of her infant son, Jonas Terrell Marsh, who died July 29, 1831. The tree was about ten years old and Mrs. Marsh said that it was "about the size of her arm" when she transplanted it. Mrs. Marsh was a first cousin of Samuel F. B. Morse, inventor of the telegraph, and was a native of New Jersey. This information was given me by her great-granddaughter, Mrs. J. W. K. Shaw, of New Iberia.

Allowing for the fact that the growth of the tree was retarded by its transplanting, and also for the fact that the growth was enhanced by care and cultivation on account of its special sacredness, I think it may be fairly assumed that seventeen feet is about the typical circumference of a live oak tree 100 years old.

Other data that I have gathered as collateral to this general estimate are the following:

The Crow live oaks which were planted in Lafayette from the acorn now measure on the average thirteen feet six inches in circumference at a point four feet above the ground. These oaks were planted by the late Basil C. Crow on his old home place in 1856. The place has long since been sold and subdivided into what is now the Elmhurst addition (named Elmhurst by its purchaser, Mr. Hedges of Iowa, probably for the reason that there was not an elm anywhere in sight!). Mr. Crow was the father of the late Mrs. Maxim Crow Girard.

The Century live oaks, eighteen in number, which were planted on the campus of Southwestern Louisiana Institute on the first day of the present cen-



The Robert Martin oak, first of the eighteen known as the Century Oaks because they were planted on the first day of the twentieth century, January 1, 1901, on the campus of Southwestern Louisiana Institute. This photograph was made on May 6, 1931.

tury, January 1, 1901, now average, after 30 years, six feet six inches in circumference four feet above the ground. They must have been from five to six years old when set out. So we have three stages of growth to make our estimates upon, from accurate and verified data. We have the sizes, in circumference of trunk, of live oak trees for three periods: thirty years, seventy-five years and one hundred years.

Nevertheless, these giant oaks whose trunks measure from twenty-five to thirty-three feet in circumference leave us in doubt as to whether they transcend the span of two, three or more centuries. We shall have to have scientific checking up and corroboration of years of growth as shown by accurate examination of cross sections of the largest existing trees. It may be conceded that live oaks may grow to be a thousand years old, in spite of the fact that none of that age and corresponding sizes are to be found today. For it is known that up to a comparatively recent time old live oak trees had an immense money value on account of their use in the building of ships for the world's navies. If there are any old-timers still in existence, as in the case of the Avery Island and Jeffer-

son Island oaks, it will be because their inaccessibility placed them beyond the ruthless hand of the shipbuilder.

The most interesting account on the subject of the culture of live oaks for the use of navies is that of Mr. Jenks Cameron in his articles on "President Adams' Acorns and How They Came to Be Planted at Santa Rosa"; "How America Tried to Grow Trees for Sail of the Line at Santa Rosa"; and "Who Killed Santa Rosa?" published in *American Forests* in March, April and May, 1928.

Mr. W. R. Mattoon, of the Forest Service of the United States Department of Agriculture, gives it as his opinion that "the age estimated for the live oak on Avery Island seems altogether improbable. On the basis of considerable information, it seems that the ages of the old and decrepit live oaks in various parts of the South are mostly from one to two hundred years. It is doubtful whether the live oak has any different period of maturing in Louisiana from that on the Atlantic seaboard. It seems likely that the oldest living live oaks are not more than two to three hundred years old."



THE WOLF

(His Song)

I am the Wolf, the merciless, the Wolf!

(Aye, start and cringe!—and listen to my song.)

My name the synonym of crime and blood;

True, more than true! Aye, and the tale is long!

Nurtured in poison hate of all your kind

Since at my mother's teat I first was laid,

I carry on the task of murderous waste.

No man shall hear me and be unafraid!

Since in misguided hour of gentler mood

I saved the world that first great prince of Rome

(Well has man paid the score with treacherous death!)

The world has offered me nor friend nor home.

So let it be; I fatten on your hate!

And curse the day I feel a softer mood!

With demon cunning I will work your harm;

My whelps shall gorge upon your choicest blood!

By cruel maiming, slaughter past my need,

You'll know my bloody trail across your lands.

Hearing my cry in echoing waves of hate

You'll know the ancient feud between us stands!

And oft as man shall hear my song of blood

He'll feel a chill fear ripple up his spine;

Cast furtive glances through the darkened wood

And sense this deadly, deathless hate of mine.

I am the Wolf, the merciless, the Wolf!

No man shall hear me and be unafraid!

—Walter J. Perry.



A FOREST PAGE FOR BOYS AND GIRLS

Conducted by
WAKELIN MCNEEL



LONG NIGHT MOON

WE ARE the heirs of the ages. The things we use and enjoy today and the marvelous devices by which they are produced have come to us out of the past from the experiences of many generations, their defeats and triumphs, the culmination of their struggles and aspirations. "The fathers have wrought and we have entered into the reward of their labors," is the proverbial statement of this truth. Run down the list of articles used each day—the garments worn, the food we eat, the playthings, the tools, the means of transportation, the methods of transmitting our thoughts and getting the thoughts of others—all better and more abundant because down through the centuries men have been struggling and aspiring to find improved ways of meeting their increasing needs and wants. And so it is that paper comes to us out of the gathered experience of the centuries.

A hasty glance into antiquity will show what man used to record his accomplishments and desires. In the British Museum is a tablet of Nile clay, which is one of the earliest specimens of writing in existence. It is a proposal of marriage written somewhere around 1530 B. C., made by one of the Pharaohs to a Babylonian king, asking for the hand of his daughter. About the time of the Pharaoh's marriage proposal, Moses carved the Ten Commandments on tablets of stone. The people of Assyria and Chaldea recorded their transactions on tablets of clay. These were so carefully baked by either artificial heat or in the sun's hot rays that the passing of centuries has not destroyed them, and they may be read today by all who know how. All that is left of the proud cities of Babylonia, Assyria and Chaldea are the tablets of indestructible terra cotta upon which they committed their records. Materials of many other kinds were pressed into

service. Skins of animals and even their intestines were used. Homer's works were written in letters of gold on the skins of serpents! In the early days of Rome the reports of notable events were written on wooden tablets and placed in the Forum for the information of all who visited that center of the city's life. Later these tablets were coated with wax, which made possible using the tablets indefinitely by simply scraping off the coating and supplying other coats as needed.

This hasty glance leading up to early paper must, of course, include mention of that plummy, graceful plant so important in the history of Egypt, the plant from which Moses' little ark was woven and which served to hide him—the Egyptian papyrus, or more familiarly known as bulrush.

Papyrus was a tall, smooth-stemmed plant that grew in abundance along the banks of the Nile River. The stem was made up of many successive layers, about twenty in number. It was from this plant that the earliest paper was made. The layers were separated and placed on a smooth table side by side; then on the top of this a similar layer was placed at right angles. The whole was then dampened and placed under pressure for a few hours. After this the sheets were rubbed with a smooth stone or shell until a

fine writing surface was secured, then placed in the sun to dry. By placing many of these sheets together the long rolls, or papyri, were made. Egypt had a monopoly on the manufacture and sale of papyrus and the library at Alexandria became the envy of the world.

In fact, the refusal of Egypt to sell papyrus to Attalus, king of Pergamus, gave rise to another form of writing material known as "pergamena" or parchment. Upon being refused papyrus, this king found a substitute, which came to be used widely all over the world for many centuries. The skins of goats and sheep were steeped in lime, then stretched on

MY NAME IS PAPER

(Revised from Pendleton Beckley's)

I am the developer of the mind of children. As they thumb my inked pages I teach them to spell, to read and to figure.

I am the life of the student and the breath of the scholar, for I have recorded and kept for them the wisdom of the ages.

I am the church. In hymn, psalter and prayer I lift up my voice unto the heaven.

I am music. Without me the harmonies of the masters could not be heard and enjoyed by all.

I am art, and I am architecture.

I am the spirit of business, of banking and of finance.

I am the law, for without precedent upon me stamped, the scales of justice would not keep an even trend.

I hold the plighted word of nations. It was because I was dishonored and trampled under foot as a mere "scrap of paper" that mighty armies unsheathed the sword in my defense, and thousands sleep in Flanders' field where poppies grow.

I am knowledge. Into the remotest places do I bring report of happenings throughout the world.

I am public opinion.

I am one of the foundation stones of civilization.

My name is Paper.

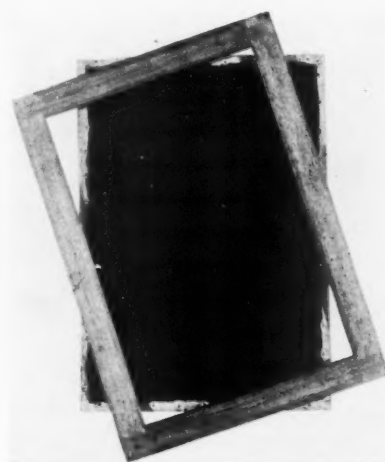
frames where the thickness was reduced by sharp instruments and a fine uniform surface secured by rubbing with pumice stones.

These were some of the writing materials of the civilized world at the time of the coming of Christ. If a simple story of the evolution of writing materials from the obelisks of Egypt to the paper of today were written on tablets of clay, as of old, it would require a state capitol building to house them. Now I can carry a more complete story in my pocket in the convenient form of a book.

Paper is one of the greatest gifts of the forest to man. About a century before the most notable event in all history which we are to celebrate this month—the birth of Christ—the Chinese discovered the craft of paper making from wood fibers. They took the branches of the mulberry tree and removed the bark and sapwood by boiling in lye. Then the fibers of the inner wood were separated by continued boiling in lye. The lye was then drained off, the fibers washed and beaten into fine pulp with a mallet. The fibers were then placed in a vat and mixed thoroughly with boiled rice. The sheets were formed by dipping a mould into a vat containing the pulp. When removed a thin, even layer of pulp adhered to and covered the screen of the mould. The mould was a sort of tray made of fine bulrushes stretched across a frame, with coarse cloth for a screen or sieve. After some of the water was allowed to drain, the sheets were laid one above the other with reed between them, pressure applied, and afterwards allowed to dry separately in the sun. The hand making of paper has changed but little from that day to the present time.

It took man a long time to arrive at this means of making paper. Today, great laboratories for technical research work are cutting down the time that the trial and error method of experience has always required to arrive at improved ways of doing things. But just the same it is interesting and profitable from many points of view to make things by old methods. Particularly is this true of paper making, because all the old principles are still employed, regard-

with appropriate materials, which are not hard to secure, can make paper? Wouldn't a Christmas greeting on paper of your own making carry an added joy? Let us see whether or not we can make our own Christmas cards. A description of the art as practiced in the 15th century will not be far removed from the methods used in all centuries preceding and following. The uten-



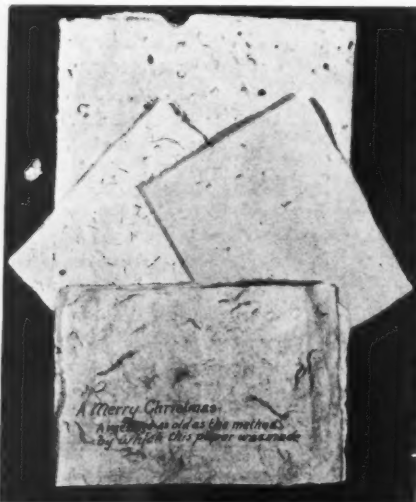
The mould. The deckle is made like a picture frame. It fits snugly over the screen or sieve and forms a shallow pan, the place in which the loose pulp lies from which the sheet of paper is formed.

sils they used we may use just about as they used them.

There were four essential utensils used in all the old paper mills—the vat, the moulds, the felts, and the presses. The vat is a receptacle, a washtub or dishpan, large enough so we can conveniently immerse the mould. The mould presents our hardest problem, not because it is hard to make but because we are quite sure not to have within easy reach the wire cloth needed. This utensil looks like a picture frame all assembled for a picture. It is composed of two parts, the deckle and the screen. The screen is made by laying a wire screening of very fine mesh over a frame and making it secure by tacks with flat heads lying flush with the frame. The size of the frame is governed by the size of paper desired. For Christmas cards a frame about three by five inches would be suitable. In well-made screens the wire cloth is supported beneath. Ours is supported by a screen

of much coarser mesh. The deckle is made like a picture frame. It fits over the screen just like a picture frame fits over a picture and makes a shallow pan which is the place where the sheet of paper is formed.

Just why the deckle and frame are separate becomes clear to the reader when we remove the paper from the screen to the felt—a procedure called "couching." It is supposed that the Persians invented the transfer deckled mould, like the one described above, only they used for a screen the slender tubes taken from a desert grass which they laid very close together and bound together by under-and-over chainwork. Because they were laid, the name of "laid" mould came into common usage. Our felts are pieces from a discarded felt belt used by a paper mill, and our press is an old letter press, though a heavy flat piece of board with weights would serve as well. The pulp we secured from a paper mill, though we have been told that pulp can be made of paper boiled and then beaten with a ladle until the fibers are (Continuing on page 764)

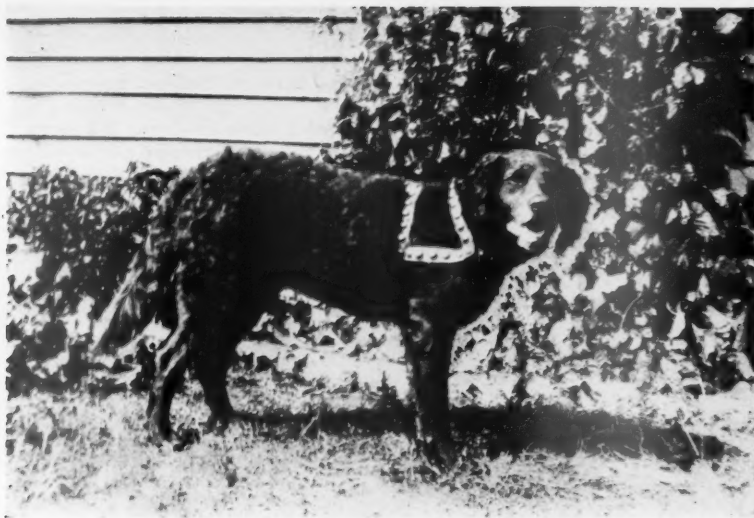


Paper made at home. Note the yarn in one sheet and pieces of silk threads in another. These were added to the pulp while in the mould and more attractive paper, introducing bits of color, results.



The Vatman. From an engraving in "Iets Voor Allen." Amsterdam, 1717.

less of the intricacies of the machinery. It might be of interest to learn that much stationery is made by hand for people who want something novel and fine and are willing to pay for it. A woman in Wisconsin makes in her kitchen the stationery used by a moving-picture actress. Do you know that any boy



"Laddie"

The Smartest Thing My Dog Ever Did

PART V

By JAMES HAY, JR.

Whenever the owners of dogs foregather, the conversation inevitably comes to the point where somebody slides forward to the edge of his chair and enthusiastically begins with the ancient boast, "The smartest thing my dog ever did—"

Having heard these remarks countless times, Mr. Hay, a dog lover himself, set out to collect from well-known men and women stories of the smartest things their dogs had done. He wanted to find out just how clever dogs are—not "trick" dogs that had been expertly trained to do circus stunts, but the general run of dogs.

These stories are being retold in *American Forests*. In November the author told of the exploits of "Eli," a setter once owned by John Hays Hammond, world-famous mining engineer. And also of "Peter," pet collie of Admiral Cary T. Grayson, sailor, sportsman and physician to President Woodrow Wilson. "Peter," the Admiral declared, "knew his colors." And the author also included the story of a real dog lover, Mrs. Lowell Fletcher Hobart, President General of the Daughters of the American Revolution, and her setter pup named "Major," who learned how to tell time! Read this last and concluding article of the series, astonishing testimony as to how even more marvelously than the human mind a dog's instinct, brain or reason sometimes functions.

CHARLES A. WEBB, of Asheville, North Carolina, and Clearwater, Florida, is co-publisher of the two daily newspapers in Asheville.

"This dog I'm going to tell you about," he explained, "doesn't belong to me, but because of the interest I took in him and the work our newspaper gave him, I feel that I can call him my dog, certainly in a journalistic sense. And I think you'll agree with me that his achievement was as smart as it was inexplicable.

"The story begins more than three years ago, in May, 1927. Little Bobbie Paradise, son of Mr. and Mrs. Fred Paradise, who were then residing in Asheville, moved to Cedar Bluffs, Nebraska, a distance of about two thousand miles.

"Two days before the family took the train, Laddie disappeared. They looked for him high and low, but finally departed without him. Bobbie was

grief-stricken. He and his father had taught the dog half a dozen clever tricks, and he was the kid's constant play-fellow.

"In Cedar Bluffs the months went by, and Bobbie, surrounded by new playfellows, soon ceased to grieve over the loss of Laddie, although the whole family remembered

him and sometimes spoke of him, wondering what could have accounted for his strange disappearance.

"Two years went by. It was May, 1929, when early one morning the Paradises were awakened by the sound of a frenzied scratching on the front door. When nobody answered the signal, it was followed by a piteous whimpering. At last Mr. Paradise got up and opened the door, and in bounded a water spaniel.

"Leaping, writhing and twisting, apparently in a paroxysm of delight, the intruder dashed past Mr. Paradise, looked into the dining room and then ran



The faithful Laddie—who traveled over two thousand miles of country alone to find his little master—after two years of separation.

into Bobbie's room, where the boy was sitting up in bed.

"O-h-h!" gasped Bobbie. "Oh-h-h, Daddy, it's Laddie!"

"At the sound of that name the dog bounded up on the bed and fell to muzzling and licking the boy's face. The father and mother noticed the dog's feet left bloody marks on the bedclothing, and they soon saw why. Laddie had traveled until his paws were raw and bleeding. Also he was thin and bedraggled looking. 'But it can't be Laddie!' exclaimed Mrs. Paradise. 'He's got Laddie's color and markings, but two years have passed! And how could he possibly have found us?' Then father and son remembered the tricks they had taught the real Laddie. They gave the old words of command, and without a moment's hesitation the dog went through with all of his 'showing off' exactly as he had done in the old days. 'It is Laddie!' Paradise exclaimed in an awed voice. 'If it's Laddie,' added Bobbie, who was now down on the floor with the dog, hugging him, 'he's got a little bunch of white hairs under his neck. Remember, Daddy?' They looked for the distinguishing mark, and there it was. Doubt was no longer possible. The spaniel after two years and two weeks separation from his young master had traveled two thousand miles across country, through towns and cities, on highways and over bridges, to rejoin him. There can be no doubt of the veracity of the story," Mr. Webb declared. "First, we got a dispatch from Cedar Bluffs telling of Laddie's arrival. We looked up some of the Paradise neighbors, who remembered Laddie and his disappearance several days before the family left. Then we wired back to Cedar Bluffs the verification of the story from the Paradises, and got it in every particular.

"What sense, intuition, inspiration, or whatever you choose to call it, enabled that spaniel to do this miraculous thing? Did he start ahead of the Paradises when he disappeared two days before their departure? Did he know where they were going? Had he been stolen, and then, making his escape, did he pick up his master's trail? But how did he pick it up?

"Do you call it an accident? If so, how could the lightning of accident strike with such precision across two thousand miles?

"Do you argue that the Paradises mistook the footsore dog for Laddie? Why, then, did the dog on bleeding feet pick out the Paradise house as a haven of refuge, and why did he go straight to Laddie's master? We'll have to know a lot more about dogs than we do now before we can answer those questions."

JOHAN N. GARNER, of Texas, Democratic floor leader in the national House of Representatives, testified as follows:

"The smartest dog I ever knew or saw was the companion, friend and confidant of my boyhood on the banks of the Red River in the Lone Star State—old Shep. Generally speaking, he was the breed known as the shepherd, but I always suspected that some of his forebears had peculiar notions concerning the companionate marriage fad. But, man, that dog certainly was smart!

"The job of cutting wood and carrying it into the house

was a never-ending task when I was a boy. The wood was always tough and the ax always dull. Our entire house was heated with wood stoves, and every morning I had to chop enough wood to fill up the woodbox in the kitchen, which seemed to me at that time twice as big as a piano box.

"One day the idea struck me that old Shep might be able to help me with this annoying chore. I put a stick of wood in his mouth and took another in my hand and invited him to follow me. We both went to the kitchen woodbox and I dropped mine in, and indicated to him that his mission in life was to follow suit.

"After three or four trips the big idea soaked into his mind, and from that day on he was always with me when I began chopping wood, and as each stick was split he would joyously grab it and race to the kitchen and put it in the box. I always knew that the box was full when he stopped carrying. Then we would slip down to the meadow and run rabbits.

"Another useful chore that Shep learned was to carry a pail of milk from the barn to the house. One of my numerous jobs was to milk three cows—the long-horned variety, not much to them except horns, bones and hide. As each bucket was filled Shep would carefully take the handle in his mouth, walk up the path to the house, set the bucket down on the porch, and rattle the doorknob with his paws to get some one to open the door for him, when he would again pick up the bucket and take it into the kitchen.

"Once in a while, however, he would act exactly like a real American farm boy. After setting the milk down on the porch, he would look in every direction and carefully listen, and when convinced that no one could see him, he would take half a dozen good laps of milk from the bucket, carefully lick his chops to remove suspicion, and then innocently rattle the doorknob.

"This procedure always tickled me. I never gave him away. It would have been too much like blabbing on some human being. Besides, I like to take a hasty drink out of a milk crock every now and then myself."

THERE is sentiment in the story narrated by Rolfe Bolling, the Washington banker, a brother of Mrs. Woodrow Wilson.

"Griff, a setter, did the cleverest thing I ever heard of in all dogdom," he said. "I owned him when I was a young man. Whenever I would command him by word and gesture to do so, he would cover considerable distances, sometimes six or eight miles, in going out and finding something I had lost or forgotten.

"On one occasion, after a hunting and walking jaunt that had taken me at least twelve or fourteen miles across fields, through woods and along country roads, I discovered that I had lost one of my gloves. When I showed Griff the one I retained and told him, 'Go get it!' he gave one bark of understanding and set out to retrace our route while I went on home.

"Imagine my embarrassment when about an hour later he came proudly trotting into the front yard with, not only my glove in his mouth, but also a lady's pocket-book which contained a small photograph of a beautiful girl, a lace



handkerchief and other little doodads that girls carry around, and seventeen dollars in money.

"I tried my best to explain that I had no idea where the dog had found that pocketbook, or who the girl was, but somehow the more I explained, the more my folks smiled.

"That was a long time ago, years and years before winter settled on my head, but I often think about it."

"I suppose you immediately threw the picture away?" I innocently suggested.

"Come with me a moment," he retorted.

He escorted me to the vault room of his bank, unlocked a big steel box, extracted a well-worn envelope and took from it a photograph which he handed to me.

It was the picture of a lovely girl.

"She's now the grandmother of my grandchildren," smilingly commented Mr. Bolling.

Had the wily old Griff accompanied Mr. Bolling on his visit to the young lady that afternoon? Had the dog seen his master toying with the pocketbook and examining the photograph? Had he heard him pleading for the picture? And had Griff decided that the best way to please his master was to steal the pocketbook containing the photograph and take it to him?

I put these questions to Mr. Bolling.

"Why discuss the obvious?" he retorted, and smiled again.



BRINGING IN THE YULE LOG

" Out of the mighty Yule log came
The crooning of the lithe wood flame—
A single bar of music fraught
With cheerful yet half-pensive thought—
A thought elusive; out of reach,
Yet trembling on the verge of speech."

THE burning of the Yule clog or log is an ancient Christmas ceremony handed down from the Scandinavians, who, at their feast of Juul, at the time of the winter solstice, used to kindle huge bonfires in honor of their god, Thor.

The bringing in and placing of the ponderous block (frequently the rugged and grotesquely marked root of an oak) on the hearth of the wide chimney in the baronial hall was the most joyous of the ceremonies observed on Christmas Eve. It was drawn in triumph from its resting place amid

shouts and laughter, every wayfarer doffing his hat as it passed, for he well knew that it was full of good promises, and that its flame would burn out old wrongs and heart burnings.

As an accompaniment to the Yule log, a candle of monstrous size, called the Yule candle, or Christmas candle, shed its light on the festive board during the evening. According to Herrick, the firing of the Yule log was accomplished from a brand of last year's log, which had been carefully laid aside for the purpose, and music was to be played during the ceremony of lighting:

" With the last yeere's brand,
Light the new block, and
For good successe in his spending
On your psalties play,
That good luck may
Come while the log is a teending."

"Kindle the Christmas brand, and then
Till sunset let it burne,
Which quencht, then lay it up agen,
Till Christmas next returne.

"Part must be kept, wherewith to teend
The Christmas log next yeere;
And where 'tis safely kept, the fiend
Can do no mischief there."

The Southern Railway Turns to Forestry

Ten Thousand Acres Are Growing Pine Trees for the Future

By JOSIE PLATT PARLER

JUST one hundred years ago the first locomotive on the Charleston and Hamburg Railroad steamed forth on its great adventure. History has it that for many years it was the longest railroad in the United States.

Every one of its one hundred and twenty-four miles passed through virgin forests of longleaf pine that stretched out in every direction as far as eye could see. What a treasurehouse of fuel ready to be rifled! The promoters of this line were not long in making sure of this inexhaustible store; almost at once they began buying the lands along their right-of-way.

No person of middle age, or more, in South Carolina, can fail to recall the great piles of cordwood that rose at monotonous intervals along the sides of the track, where the trains stopped to take on wood as regularly as they paused for a drink at the water towers that flanked each stream.

When, in due course of time, the ownership of the little railroad passed to the South Carolina Railway and Steamship Company, it continued to draw upon this apparently inexhaustible supply of resinous, longleaf pine. Inevitably, however, the superior merit of coal asserted itself and, one by one, the little wood-burners were junked—but not until most of the railroad lands were denuded of trees.

From being an invaluable asset, the land now became a liability. It was offered for sale to farmers who might move in and thus open up new territory. The fact that the trees had been cut down was an added attraction to such settlers, who saw in forests nothing but incumbrances that must be removed before the land could be farmed. Not all of the land owned by the railroad was sold in this manner, however, and for years it lay idle, the prey to regularly recurring fires. In time these tracts came to be considered more or less public property. Anyone who wished to use the woods for grazing or hunting helped themselves.

The transfer, in 1899, that made the road a part of the Southern Railway System, included titles to all such lands as had not already been sold. As a matter of sound business they continued the policy of selling the land whenever

a purchaser appeared. And then, about six years ago, someone awakened to the potential wealth that lay in the second-growth of trees on these cutover lands. Despite the fires that each year burned themselves out among them, the little pines were beginning to attract the attention of the thoughtful observer. A survey was made and possibilities discussed and investigated. Then, at last, a tract of ten thousand acres was set aside to be used as a demonstration forest under the direction of Roland Turner, general agricultural agent for the Southern Railway. This project, at Pregnall, was the first large reforestation program in South Carolina.

Large areas of second-growth longleaf, loblolly and slash pine were given an opportunity to show what they could do if protected from fire. Five years of systematic fire protection have told their story, and today, as far as eye can reach, the growing young trees present an appearance that suggests the parklike forests of Europe.

With pardonable pride, Mr. Turner takes his visitor through the leveled undergrowth of the tract where dim vistas stretch out for miles beneath tall, straight pines, forty years old. These forests proudly yield their quota of mer-

chantable timber, over fourteen inches in diameter, and a supply of naval stores products sufficient to pay the expenses of the project.

All of the ten thousand acres, whether under cultivation or not, were reclaimed for the purpose of growing trees, and this year sees the completion of the planting of all deforested areas. This means that there are seven thousand five hundred acres of pines in the



Trees marked for thinning in a test plot in the demonstration forest of the Southern Railway. Here miles of parklike trees—tall, straight pines—proudly yield their quota of merchantable timber and naval stores.

forest. The remaining two thousand five hundred acres are swampy places, or bays, where gum and hardwoods are more adapted to the soil. One of these is Big Bay, a dense swamp into the farthest depths of which tradition says no man has penetrated.

In the first field where slash pine seedlings were planted five years ago, there is a forest of trees from twelve to eighteen feet in height. Furthermore, in this planting there are volunteer longleaf trees, seeded within the same time from the nearby forests. These (Continuing on page 765)



Prize Alibi

"Don't you work in my motor plant?"
 "Yes, boss."
 "Didn't I tell you to make a garden?"
 "Yes, boss."
 "Where is your garden?"
 "There it is, boss. I'm raising goldenrod for tires."—*The Louisville Courier.*

Redeeming Feature

There's a redeeming feature to the recent gang war in the mountains. The bullet holes in the billboards give the motorist a chance to see some of the scenery.—*Judge.*

Notice to Quit

Growled a bear to a hunter: "Look here, You have reason the future to fear. If you don't quit this spot Without firing a shot Trouble's bruin—I hope that is clear!"

—*Kablegram.*

Elephants vs. Bears

An adventurer has forsaken elephant hunting to enter the stock exchange. Evidently doesn't know when he's safe.—*Greenville Piedmont.*

Making the Most of It

"Traveled all over the world, eh? Went up the Rhine, I suppose?"
 "Climbed it to the top."
 "Saw the Lion of St. Mark?"
 "Fed it."
 "And visited the Black Sea?"
 "Filled my fountain pen there."—*Stray Stories.*

And What a Bird!

Strangely enough, the star of the Red Bird team was a Martin.—*Florence Herald.*

Loafs and Fishes

"I can't help but notice," writes a correspondent to the *Washington Post*, "that a number of men, prominent in the public eye, appear to be ardent anglers. How do you explain their consuming passion for fishing?"

"Perhaps," suggests the editor, "it's not so much for the sake of the fish as for a chance to loaf without being watched."—*The Pathfinder.*

Boy, How He Could Ro'

A fisherman came to the lake shore where some boats were tied up and asked a colored boy if he could row, to which he received a reply in the negative. Shortly thereafter the boy jumped in a boat, and started to pull away. "Hey," called the fisherman, "thought you said you couldn't row."

"Who, me? I thought you meant ro', lak a lion."—*Lumber Co-operator.*

Same Old Angle

How doth the little fisherman Improve each shining hour?
 He drinks his bait, and gets home late,
 And lies with all his power!
 —*The Pathfinder.*

The Big Kick

The yellow jacket isn't long,
 Nor yet so very thick,
 But, man alive, he sure is strong
 In letting loose a kick.
 —*Youngstown Telegram.*

Coming Down!

A scientist says that mankind is of vegetable origin. Obviously. Men descend from monkeys, monkeys from trees.—*Punch.*

Revised Version

TREES

(Close to highways)

I think that I shall never see,
 Along the road, an unscrapped tree
 With bark intact, and painted white,
 That no car ever hit at night.
 For every tree that's near the road
 Has caused some auto to be towed.
 Sideswiping trees is done a lot
 By drivers who are not so hot.
 God gave them eyes so they could see,
 Yet any fool can hit a tree.—*Judge.*

Rivals

Our rivals are insects, says an eminent entomologist. Of course, but it's darned hard to make the girl of your dreams realize it.—*Boston Herald.*

Useless Information

The goldfish is one of the fastest things in the world. It can go around the globe in several seconds.

A flower is the only thing that can be up and still in bed.—*The Pathfinder.*



The big-game hunter's son wins his spurs.

AROUND THE STATES



New Jersey to Develop Forest Sections

While not so extensive or expensive as the proposed \$19,000,000 reforestation program of New York State, New Jersey has a plan of forest and park development which in some respects is similar, according to the State Forester, C. P. Wilber.

New Jersey now owns 43,932 acres of state forests, said Mr. Wilber. The plan suggested would add 326,711 acres, bringing the total to 370,543. Of that area, 78,000 acres would be in the northern part of the state and 292,543 in the south.

Involved in the program is the proposed expenditure of approximately \$7,600,000 over a period of ten or more years, the money to be spent in land acquisitions. Included is \$1,575,000 for the purchase of seashore parks.

Ordinarily, it was pointed out by Mr. Wilber, lands for park purposes cost a great deal more than those for forests, since the former must be in an accessible location. In the contemplated program only 17,076 acres are recommended for purchase for park purposes, which would leave an amount estimated at \$4,000,000 for acquiring more forests.

A complication, however, is the fact that state forests are closely linked with state parks, both in location and maintenance. The legislature this year named a special committee to study the park question and the possibility is seen that the recommendations of this body may be in conflict with the plans of the State Conservation Department. In that case, said Mr. Wilber, it will be for the legislature to adopt a program.

Until a program has been approved, the department is encouraging the owners of idle land to plant seedlings grown in state nurseries and offered at cost. Some 2,000,000 seedlings of a type adapted to New Jersey will be ready for shipment next spring, orders for which are now being received. This amount will be enough to plant 2,000 acres.

"But the rebuilding of our wilderness will not be done by private initiative or at private ex-

of its forested condition, and public protection of its possibilities.

"There are almost 2,000,000 acres of wild lands in New Jersey. This is nearly one-half of the total area of the state. This acreage is increasing, not shrinking. About one and a half million acres of it is unproductive, idle, waste land. If given only fire protection, parts of it will recuperate of itself, but this will take from 150 to 300 years. If also given proper care it

can all be made useful, profitable and beautiful within fifty years and much of it within twenty-five to thirty years. Other parts of the country have their reclamation problems and projects in irrigation, flood control and draining, for which great sums of money are made available. New Jersey's waste land problem is in one of these categories. It is nevertheless proportionately as acute and as important.

"The answer to our problems is the production and maintenance of timber on our wilderness. It is now as useless to the state as flood, plain, swamp and desert are to the South, the Lake States and the West. It will repay the state for rehabilitation, as those other lands have and are paying for their return to usefulness."

NEW YORK VOTES \$20,000,000 FOR REFORESTATION

Although complete returns were not available at the time of going to press, it has been announced that the Hewitt Reforestation Amendment, authorizing the expenditure of \$20,000,000 over a period of twelve or more years for reforestation in the State of New York, was approved by the people by a wide margin at the election on November 3.

Briefly, the approval of the amendment authorizes the State Legislature to appropriate each year for the next eleven years funds for the acquisition of land, outside the Adirondack and Catskill Parks, as now fixed by law, best suited for reforestation, for the reforesting and the protection and management of these forests; for the acquisition of land for forest tree nurseries, and for the establishment and maintenance of such nurseries, such appropriations to begin in the first year with the sum of \$1,000,000 and increasing annually by the sum of \$200,000 to and including the sixth year, and in each of the five years immediately following the sum equal to that appropriated for the sixth year.

pense to any appreciable amount," said Mr. Wilber. "Its degradation has been permitted through public carelessness and indifference. Its reclamation is a public responsibility and duty. We are an old state in which land ownership long since passed from public to private hands. This reclamation, therefore, involves public purchase of the land, public restoration

Memorial Grove to Honor War Dead

A grove of forest trees, each tree to be a memorial in itself, will be planted this fall at the Memorial to the War Dead of the District of Columbia, in Washington. Veteran organizations and patriotic individuals are donating the trees.

LUMBER SURVEY COMMITTEE RECOMMENDS REDUCTIONS OF STOCKS BY INDUSTRY

Continued existence of the lumber industry depends to a large degree on establishment of a "reasonable balance" between lumber supply and demand which must be preceded by an extensive reduction of stocks, the Lumber Survey Committee of the Timber Conservation Board reported October 28th. This committee was appointed in July to make an analysis of current lumber production and consumption, and lumber stocks and prospective consumption.

Adverse conditions of the lumber industry have reached a degree sufficiently acute, the committee declared, to justify "extraordinary corrective" steps by manufacturers and distributors. The Committee expressed the opinion that a "prompt and extensive" reduction of excess stocks in all regions and all species will substantially shorten the present period of depletion of the industry's capital assets. Although lumber stocks have been reduced 1,500,000,000 board feet since the first of 1931, further decreases totaling approximately 4,500,000,000 feet should be made next year, the report said. This reduction should comprise 3,250,000,000 board feet of soft woods and 1,250,000,000 of hard woods.

Recommendations of the Committee are as follows:

1. That as rapidly as possible stocks in the hands of lumber manufacturers be reduced to the extent necessary to reestablish a reasonable balance between stocks and demand. For the industry as a whole the reduction of stocks

during the next year should be approximately $4\frac{1}{2}$ billion feet.

2. That to the extent to which financial and community exigencies will permit, lumber production by individual manufacturers be limited to such volume as will accomplish the recommended reduction of stocks.

3. That consideration be given to the need and to the means of deferred financing which will stimulate additional prudent building, especially farm business buildings and small homes.

4. That the industry consider the practicability of consolidated sales organizations which offer sound prospects of added economy and flexibility in production and distribution; and, especially in the Pacific Northwest, the economic advantages of regional consolidations of ownership and operation.

5. That the Timber Conservation Board make, or cause to be made, further periodic surveys and reports on current and prospective lumber supply and demand, with suitable recommendations.

The committee consists of Thomas S. Holden, economist, F. W. Dodge Company, New York; Dr. Frank M. Surface, assistant director, Bureau of Foreign and Domestic Commerce; M. W. Stark, lumber and coal economist of Columbus, Ohio; Calvin Fentress, president, Baker, Fentress & Company, Chicago, Illinois; and Wilson Compton, secretary and manager, National Lumber Manufacturers Association.

Disease Taking Heavy Toll of Life Among Waterfowl

A disease caused by a one-celled organism is taking further toll of wild ducks already depleted in numbers by conditions following last year's great drought, according to the Department of Agriculture. Mortality among the young ducks is very high, according to the statement, and some flocks are 100 per cent infected.

The organism is a protozoan known as *Leucocytozoon anatis* Wickware, according to a report received by the Bureau of Biological Survey, from Dr. Earl C. O'Roke of the School of Forestry and Conservation of the University of Michigan. Dr. O'Roke has just completed his second summer's study of this disease at the University Biological Station, Douglas Lake, and elsewhere in Michigan.

This organism has a complicated life cycle. In certain stages it occurs in the red blood cells, and in others in tissue cells of glandular organs. The parasite is transmitted from duck to duck by the bites of black flies or buffalo gnats. Adult ducks harboring the parasites are apparently little affected by them, but ducklings succumb in large numbers. Death of the duckling may occur at the time of the first appearance of symptoms, but usually it does not take place until the twelfth day after exposure.

New York Adopts Airplane in Fire Fighting

For the first time in its conservation history the State of New York has made use of the airplane in fighting forest fires. According to K. F. Williams, supervisor of Forest Fire Control for the State Conservation Department, the plane proved entirely satisfactory in fire control work and it is planned next year to install a two-way radio system to increase aerial efficiency. Albert Leo-Wolf has been named chief pilot for the Department.

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But today . . . the need for "having a heart" is more tragic, more urgent, more terrifyingly necessary, than ever in the world's history. American children and children of many nations, are STARVING. As the facts accumulate, this situation might well cause us to shudder with horror . . . "Starving Children" . . . not a pleasant thought!

What a beautiful thing it will be for YOU, this Yuletide, to give, if but modestly, to these tiny sufferers to whom even a crust of dry bread will come as a blessing. "GOLDEN RULE WEEK" is a constructive opportunity in this direction. The long arm of its vast charity reaches out and finds those hungry youngsters . . . feeds them. You will do YOUR share, we know.



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Lands for Great Smoky Park Formally Given to Government

Great Smoky Mountains National Park represents a new vision of American citizens in transferring private lands to the federal government for preservation, scenic beauty, recreation, and conservation. Ray Lyman Wilbur, the Secretary of the Interior, declared in a ceremony at the Department November 2, when representatives of the governors of Tennessee and North Carolina presented him with the deeds to 138,843 acres of land for inclusion in the proposed park.

In accepting the deeds, Dr. Wilbur said already 297,000 acres representing about 450 square miles or two-thirds of the area ultimately to be acquired have been transferred to the federal government.

Colonel David C. Chapman, of Tennessee, and State Senator Mark Squires, of North Carolina, presented the deeds on behalf of the governors of their respective states.

The land transferred was the second installment of land for inclusion in the Great Smoky Mountains Park, which, when completed, will have an area of not less than 427,000 acres and be divided almost equally between the states of North Carolina and Tennessee.

Deeds to 158,876 acres in the park area were presented by Governors Gardner of North

Carolina and Horton of Tennessee to Secretary Wilbur on February 6, 1930, thus forming a nucleus for the new park. The lands added today bring the area up to 297,719 acres, or about 450 square miles. The law of Congress establishing this new park has provided that it may not be developed by the construction of roads, trails, and other improvements, and the installation of accommodations for visitors, until a total minimum area of 427,000 acres has been deeded to the government in fee simple.

In his address Secretary Wilbur stated that for citizens to put their backs into a project which is to put into the possession of the nation these mountains, forests, and streams, means that a new vision has come to many of our citizens. He especially thanked the representatives in the two states on the park commission who have done the hard chores on the job, saying that they have kept it from failing at critical times.

Funds for the park land were raised by the states, by private citizens, and by a gift of the Laura Spelman Rockefeller Memorial. This memorial, through Mr. John D. Rockefeller, Jr., offered \$5,000,000 to be matched dollar for dollar by sums made available from the states.

Roosevelt Monument Dedicated

Theodore Roosevelt, the "Trailblazer of Forestry," was honored by the United States Government and the forest conservation world on October 25. A monument "Erected to Theodore Roosevelt in commemoration of his leadership in the conservation of the forests of the United States" was unveiled on the Theodore Roosevelt International Highway at Marias Pass, Montana, with ceremonies in which more than 600 people took part.

States Forest Service grew to be the undefeated champion of the rights of the people. While he lived, no man, no interest, no politician, and no combination of them could make it afraid."

Three inches of snow did not dampen the enthusiasm of the crowd when Representative Scott Leavitt of Montana was presented with the official badge of the Forest Service as a token of his ten years association with



Photograph by K. D. Swan

The colorful dedication ceremonies, just before the great shaft, erected to the memory of Theodore Roosevelt at Marias Pass, Montana, was unveiled.

Although unable to attend, Governor Gifford Pinchot, of Pennsylvania, appointed by Roosevelt as the first chief forester of the United States, expressed himself by letter. "Theodore Roosevelt," wrote the Governor, "embodied, as few other men have ever done, the spirit of East and West in the highest form of both, and was the friend of conservation and forestry. Under him the United

States Forest Service grew to be the undefeated champion of the rights of the people. While he lived, no man, no interest, no politician, and no combination of them could make it afraid."

"The purpose for which this monument is erected by the Congress of the United States to Theodore Roosevelt for his leadership in forest conservation may be stated in a few words," he said. "The first day of February, 1930, marked the twenty-fifth anniversary of

the organizing of the present Forest Service. Theodore Roosevelt was at that time, in 1905, President of the United States and it was because of his interest in the conservation of the National Forests that this reorganization was possible, and it is in turn due to that reorganization that forest conservation came to assume its place of great importance in the life of the nation. So clearly did President Roosevelt see the necessity of a well-founded forest policy that he remarked on one occasion that the conservation of its forests constituted in many ways the most important internal problem of the United States.

"The location of this monument on the Continental Divide and on the boundary line between the Lewis and Clark and the Flathead National Forests has a special significance. It stands in the center of a highway dedicated to this great leader. It stands in the center of that highway so that it will stand in the view of the thousands following this way to the West. It stands in what may well be considered the gateway to the great region of National Forests into which the traveler will go as he passes this way. It will serve to implant in the minds of those who come here the purpose and the need of the care of the forests. They will travel on with minds turned towards their own duty to assist in the preservation of that heritage which leaders such as Theodore Roosevelt and those who labored with him thus preserved for the generations to come.

"It will arise here a memorial to great public service. It will arouse the desire of those who witness it to emulate in their own way those qualities of good citizenship which include an essential contribution to the general welfare."

In accepting the custodianship of the monument, E. A. Sherman, associate forester of the United States Forest Service, said, "The Forest Service gladly accepts the custodianship of this monument. We, too, are of both East and West. Today, standing on this great continental divide, we rejoice that Theodore Roosevelt was our great leader. It was his signature that brought the Forest Service into existence. His signature added 120,000,000 acres to our National Forests and dedicated them to the service of all the people. Take from our National Forests today the reservations made by Theodore Roosevelt; balance against them all the lands added by other Chief Executives before his day and since, and his contributions outweigh them all.

"In the name of the Forest Service, and pledging its support to the principles of human justice which inspired the cause of conservation, this memorial is accepted to be held in trust for the people of the United States, generation by generation."

Color was given to the dedication by the presence in full regalia of a number of famous Indian chiefs of the Blackfoot Tribe. Among them were Mike Short-Man, an old-time warrior; Wolf-Plume, a member of tribal council; Jim White-Calf, whose father, White-Calf, was the last recognized chief of tribe and a delegate to Washington to see Roosevelt in 1903; Bird Rattler, a judge of Indian Court; and Wades-In-Water, chief of the Indian police.

The monument was approved by the Fine Arts Commission at Washington, D. C. The shaft stands sixty feet high and the proportions are similar to those of the Washington monument in the National Capital. The base platform is twenty-four feet square. The monument is made of granite with reinforced concrete core.

One tablet bears the inscription, "Erected to Theodore Roosevelt in commemoration of his leadership in the conservation of the forests of the United States. 'Forestry is the preservation of the forests by wise use.'—Theodore

Roosevelt." Another tablet reads, "Erected under authority of an Act of Congress approved by President Hoover, June 2, 1930."

The pass where the monument was erected was formally called Roosevelt Pass, but is now officially designated John S. Stevens Canyon. It lies between Belton and Glacier Station, Montana, and was known to Lewis and Clark as early as 1806. It was never traversed by white man until Stevens passed through it early in 1809.

Western Governors Favor Transfer of Public Domain to States

A resolution approving the recommendations of President Hoover's Committee on the Conservation and Administration of the Public Domain, made public last April, was adopted by the Western Governors' Conference, at Portland, Oregon, late in October. The recommendations provided an optional grant to the western states of the remaining unreserved public lands of the United States, totaling 180,000,000 acres, with certain reservations to the federal government.

Federal ownership of these lands was opposed at the conference by several speakers. Charles E. Winter, former representative in Congress, declared that state control of public lands would be far more economical than federal control, and said that high federal officials are now beginning to admit that argument. He gave as his opinion that ultimately the federal government will turn over to the states all public lands except the National Parks.

Thomas Maddock, Arizona Chairman of the State Colorado River Commission, urged that the western states fight against further encroachment on their lands by the government. He assailed federal officers handling the affairs of the Public Domain, referring to them as "carpet-baggers."

Other addresses of interest included one on National Forest problems by Dr. A. G. Crane, president of the University of Wyoming, who urged that the western states get together and act coincidentally on the problems of water, livestock, recreation, forest fire control, forest insects, forest research and forest roads; an outline of the recreational needs in the National Forests by Asahel Curtis, chairman of the Recreation Development Committee of the Washington State Chamber of Commerce; and watershed protection by William Peterson, extension director, Utah State College. Forest fire control was presented by Daniel H. Blood, California director of Natural Resources; fire cooperation between state, government and private owners by David T. Mason, secretary-manager of the Western Pine Manufacturers Association; recreational needs on the National Forests by Governor G. H. Dern, of Utah; and water resources by Colonel A. E. Clark, representing Governor Meier, of Oregon.

Increase New England Area Under Quarantine for the Satin Moth

A revision of the satin-moth quarantine regulations modifying the regulated area and making other changes in the requirements has been announced by the Secretary of Agriculture. The new restrictions, which will become effective December 1, 1931, prohibit the interstate movement of poplar and willow trees, and parts thereof capable of propagation, from the additional territory to outside points. The Plant Quarantine and Control Administration of the Department maintains the satin-moth quarantine to prevent satin-moth nests from being carried from the infested parts of the New England States and the State of Washington to uninfested sections of the country.

The territory now added to the regulated area includes fifty-one towns in ten counties in four states.

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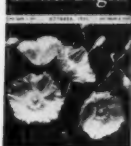
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Book News



and



Reviews

GREAT OAKS, by Ben Ames Williams. Published by E. P. Dutton & Co., Inc., New York; 351 pages. Price, \$2.50.

"Once upon a time there was an island of a fair sweet aspect lying off the steaming forests of the Florida main, where, beneath great oaks that watched, benignly, since the first Jesuit came in the bloody wake of Spanish swords, fine men dreamed their dreams and toiled and fought for them, while lovely women dwelt by their sides in tender loyalty."

Into the pages of "Great Oaks" Ben Ames Williams has carried the magic and the spell of the island where his story is laid. It is a story which only Ben Ames Williams could draw from the great live oaks that grow upon this and neighboring islands. A visitor on the island, the author sensed a hidden story. "They stood here now," he writes, "in the grave dignity of a mature fellowship, and I thought they must remark, sometimes, what men and women chose to do beneath their shade; and I thought they must have many old tales to tell, if the way to communication between us could be found." The author found the way and the great old oaks communicated their tale to him. It is a delightful, imaginative story, beginning with the days of the missioner and carrying through the times and scenes of the famous pirate Blackbeard, the eras of the despoiler and the chevalier down to the days of the planter and the builder.

To those who love trees, history, action, all warmly told, "Great Oaks" is a book that captures the reader, holds him in its spell.—O. B.

"Christmas Trees as a Cash Crop for the Farm."—Farmers Bulletin No. 16646, issued by United States Department of Agriculture, Washington, D. C. A thorough review of growing Christmas trees as a farm sideline, dealing with investments, location, planting time, the market, and the best Christmas tree species.

"Shade, Windbreak and Timber Trees of South Dakota,"—"Evergreens in South Dakota," and "Ornamental Trees of South Dakota," are the titles of three bulletins by N. E. Hansen which have been recently published by the Horticultural Department of the State College of Agriculture and Mechanic Arts at Brookings, South Dakota. Each bulletin is freely illustrated with half tone cuts. Together they present a complete story of the trees and shrubs which are native, or will grow in South Dakota.

The characteristics, growth, management and economic importance of southern white cedar are presented in Technical Bulletin 251 of the United States Department of Agriculture. "Southern White Cedar" contains seventy-four pages with numerous illustrations and is by C. F. Korstian and W. D. Brush.

Descriptions of many common insects and suggestions for their control are included in "Some of the more Important Insects and Plant Diseases of Wisconsin Trees and Shrubs" by

E. L. Chambers and N. E. Thompson. It is available from the Wisconsin Department of Agriculture and Markets at Madison, Wisconsin.

Red Book of Christmas Material, by L. D. Benner. Published by the Central Publishing Company, Cleveland, Ohio. 186 pages. Price, 75 cents.

Here is a collection of songs, poems, and playlets especially valuable to Sunday School teachers in preparing special juvenile entertainments at Christmas time.—D. H.

Life history studies of the Wyoming ground squirrel in Colorado are described by W. L. Burnett in Bulletin 373 of the Colorado Agricultural College at Fort Collins. This little rodent inhabits the open grass lands of northwestern Colorado at elevations of 6,000 to 11,000 feet. The studies were made to determine any relationship which the ground squirrel has on agriculture and to be prepared with information in case control is desirable.

THE MENACE OF OVERPRODUCTION, edited by Scoville Hamlin. Published by John Wiley and Sons, Inc., New York; 202 pages. Price, \$2.75.

A symposium on overproduction in which eighteen different phases of industry are discussed, each by a keen, far-sighted specialist, who knows from personal, practical contact, the problems of his field. Their views on the cause, extent, and cure of overproduction are clearly stated, enlightening and convincing. It is a worthwhile analysis of the present business depression, with a climax of remedies.—E. K.

Ground fires, logging operations and other activities which seriously disturb the forest floor in regions where currant and gooseberry bushes grow wild may materially encourage the germination of currant and gooseberry seeds which have been dormant in the soil. This reflects a direct relation between forest fire control and the extension of white pine blister rust according to studies reported by A. E. Fivaz in Technical Bulletin No. 261, of the Department of Agriculture, entitled "Longevity and Germination of Seeds of Ribes." Records are available to show that the seeds of skunk currant remained viable in forest duff for five years, but for most of the species of ribes the storage period is shorter.

"Deterioration of Chestnut in the Southern Appalachians"—by D. V. Baxter and L. S. Gill. Issued as Technical Bulletin No. 257, by the United States Department of Agriculture, this is for sale by the Superintendent of Documents, Washington, D. C., for ten cents a copy. The rate of deterioration of chestnut in the southern Appalachians and the problem of salvage are questions of immediate concern to the forester and the timberland owner, and this bulletin is the result of a comprehensive study of the whole field to furnish information relative to blight-killed timber found in the South.

Christmas Trees of the Manzano

By J. C. NAVE

THE people of the Manzano National Forest, in New Mexico, are public spirited and Yuletide loving citizens and demand a large number of Christmas trees annually to decorate their homes. The Sandia Division, which supports only a limited amount of reproduction suitable for Christmas tree purposes, is the most convenient area from which they can be secured. It therefore becomes a problem for forest officials to supply the required decorations.

A knowledge of stock on hand and the rate at which Christmas trees can be grown is necessary in order to determine the number of trees that can be cut annually. The former is determined by cruising the area supporting suitable trees, and the latter predicted by determining the number of years necessary to

A smooth surface on the stump with no bruises or splits is most conducive to the development of new leaders; therefore, a saw is used for all cutting. A twenty-two inch pruning saw with a ten-foot handle is the most effective tool.

Under the present policy, all cutting is done by forest officers, but cutting the trees is the smallest part of the task. They must be dragged in some instances through dense brush thickets to roads where they can be loaded on trucks and hauled to a central depository. The public calls at this depository and makes their own selection of trees, and pays a fee of twenty-five cents for each tree to defray expense of handling.

This central depository is the scene of much hilarity the last few days before Christmas.



The crowd at Tijeras Ranger Station selects its Christmas trees.

grow Christmas trees, which is estimated to be from twenty to twenty-five years from the seed.

The actual cutting of the trees is supervised by experienced forest officers and precaution is exercised to see that the stand is not depleted. Actually only about twenty per cent of the total number of young trees of sapling and pole size, which frequently grow in very dense stands, are cut.

Contrary to the general policy of cutting the stump low when harvesting government timber, the stumps of Christmas trees are cut as high as possible consistent with securing the desired size tree. In actual practice, they range from five to twelve feet in height. This makes possible the growing of another Christmas tree on the old stub through the development of adventitious buds. It is estimated that a new tree can be grown from the old stub within about one-half the time required from the seed, due to the already well established root system.

On Sunday, December 22, 1929, over one thousand people called at the depository seeking Christmas trees. Men, women and children showed much merriment in wading through and making selections. Members of the canine family were no less jubilant than the children.

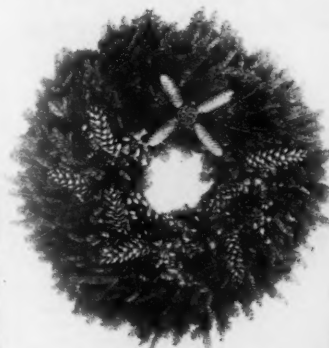
To eliminate this damage by walking and trampling over the trees, it has been decided to build what is termed a Christmas tree yard. This yard will consist of several rows of posts ten feet apart across the area. Two strands of wire will be stretched at the bottom and one at the top of the posts. The trees will be set between the bottom wires and temporarily wired at the top, thus enabling people to circulate through the area and make their selection of trees without damaging them.

Practically all of the trees used are of the white fir (*Abies concolor*) species. They grow symmetrical and are beautifully adapted to Christmas trees, though the species is inferior for sawtimber purposes.

Final Report of Southern Forestry Educational Project Available

The final report of the Southern Forestry Educational Project of The American Forestry Association in cooperation with Florida, Georgia, Mississippi and South Carolina, which began in 1928 and was completed this year, has been printed. Copies are available and may be secured by writing The American Forestry Association, 1727 K St. N. W., Washington, D. C.

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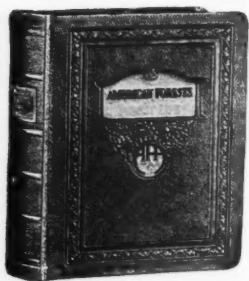
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Pratt Tells Conference Need of Conserving Soil

Declaring that soil conservation is the fundamental of both conservation and land utilization, George D. Pratt, President of The American Forestry Association, told the Land Utilization Conference, meeting at Chicago, November 19 to 21, that it might as well close its meetings and go home if the conference does not set its face with all earnestness and determination to stop soil devastation and soil wastage. "Our ability to carry through successfully our programs," Mr. Pratt said, "rests squarely upon our ability as a people to hold our soil and conserve its life." The forestry leader further declared that forest fire and erosion in their effects upon soil stability and productivity are a challenge which this or any other land utilization conference cannot ignore or sidestep.

"Forest conservation has already accepted this challenge," said Mr. Pratt. "It has set up state and national fire protection organizations that have created a fire-fighting army of more than thirty thousand men." The fire protective system of the federal government, the states, and private owners, he said, are today providing some sort of organized fire protection to more than 200,000,000 acres of forest lands in the United States. The system, however, is not adequate to meet current fire hazards. "Land utilization," Mr. Pratt said, "can and must bring to this organized army now in the field the additional support necessary to make it competent."

Mr. Pratt addressed the conference on the subject "Land Utilization and Conservation." He held that they are one and the same excepting that land utilization is a larger and more unified addition of conservation. The speaker traced the origin and growth of the conservation movement and pointed out that today there are numberless organizations, public and private, specializing in some phase of conservation—forests, parks, wild life, water, soil, oil, recreation, scenery, wild flowers, etc.. "This conservation set-up," the speaker held, "is a present and potential land asset to the nation in that it represents an enlightened and organized public mind sensitive to the need of a common program of coordinated objectives once such a program is formulated."

The speaker laid special emphasis upon the need of formulating a national use program for the wild lands of our country which embrace more than one-third of the total land surface in the United States. It is these lands that conservation has most largely dealt with. "Their use or non-use," the speaker said, "influences for good or bad the productive use of virtually all land and the social and economic use of the community, the state, and the nation. It is a paramount problem of land utilization, therefore, to fit these soils into the land use pattern of the whole country so that they may render their highest complementary services."

To this end conservation, Mr. Pratt asserted, has much to contribute. This he summarized as the present conservation set-up with its past experiences and accomplishments, its many organizations, and its wide-spread land use consciousness. He stressed particularly a system of National Forests which the conservation movement has to show for its past efforts. "To my mind the National Forests represent the most outstanding large-scale demonstration of land utilization to be found in the United States," Mr. Pratt declared. This system together with other accomplishments of conservation in the form of state forests and parks, National Parks and game reservations, he held, provides a nucleus that "demands zealous protection and judicial expansion to a position of balance in the national scheme of land ownership and use."

The agencies and organizations already set up by the conservation movement in every

natural resource field, Mr. Pratt stated, can be a tremendous additional power in developing a national program of land utilization. "It can almost be said," he stated, "that conservation has prepared the public mind for the larger undertaking of land utilization." In concluding his remarks, the speaker emphasized the need and importance of coordinating the efforts, the minds, and the objectives of the many groups and organizations now engaged in the various fields of conservation. This, he said, is a clear objective which land utilization must accomplish.

Duck Shooting Season Adjusted

Under an amendment to the Migratory Bird Treaty Act Regulations, approved by President Hoover, the seasons for hunting wild ducks, geese, brant and coot have been changed in fourteen states. The season nowhere exceeds one month, however. Under the new changes the season for hunting in Massachusetts, Connecticut, Rhode Island, and Illinois was designated the month of November; in Ohio and Indiana the season from October 16 to November 15; in Iowa, Missouri, Nebraska, Kansas and Oklahoma from October 20 to November 19; while in Nevada, Oregon and Washington the season will commence November 16 and close December 15. All dates are inclusive.

Since the amendments of August 25, information submitted by sportsmen and interested persons and supported by investigations made by the Department indicated that the open season previously prescribed did not give residents of these states hunting opportunities comparable with those given in other nearby states.

Wood Preservers Take Issue

Referring to a news item appearing in the November issue dealing with the use of creosoted timber by the Treasury Department, The American Wood Preservers point out that the story implied that the question of the permanence of creosoted timber when exposed to air was at issue. This is obviously an error, they maintain, and should be corrected. The story referred to evidence presented to establish the permanent nature of creosoted timber in service under conditions similar to those obtained for foundation piling, where part or all of the pile might extend above the level of saturation, but be completely embedded in the earth and covered with concrete. The permanence of wood though untreated and when continuously submerged has been established, they claim, by engineering experience and practice extending over many centuries.

The argument for permanence of creosoted timber when buried, is based on the fact that circulation of air about the specimen is essential for evaporation of creosote from the wood to take place, the Preservers maintain. So long as creosote remains in the wood it is preserved from decay. Actual circulation of air around the buried specimen and therefore the loss of oil from the wood regardless of whether or not it is submerged is so remote a possibility, as shown by actual examples of very old piles, that the service life under these conditions may be considered, for all practical purposes, as permanent.

Spring Joins Syracuse Forestry Staff

Samuel Newton Spring, professor of silviculture in the Department of Forestry at Cornell University, has been appointed assistant dean of the New York State College of Forestry at Syracuse University. He will assume his duties early in 1932, taking over the responsibility for the coordination of education and research at the college.

Professor Spring received the degrees of B.A. and M.F. at Yale in 1898 and 1903, respectively. He served as field assistant in the United States

Forest Service after graduation and the same year became head of the Forestry Department at the University of Maine. From 1905 to 1909 he was forest assistant to the United States Chief Forester in the office of forest extension. He became forester for the Connecticut Agricultural Experiment Station and State Forester for Connecticut in 1909 and was appointed professor of silviculture at the New York State College of Agriculture, Cornell University, in 1912. He was special lecturer at the Yale School of Forestry during 1917, and secretary of the Connecticut Commission on Investigation of Taxation of Woodlands in 1912.

Outline Plan for Economic Study of Naval Stores Industry

A program for stabilizing economic conditions in the naval stores industry of the southeastern section of the United States by means of private and governmental cooperation was tentatively drafted at a meeting between representatives of the industry and members of the Timber Conservation Board, November 11.

A greatly unbalanced ratio between production and consumption, tax rates, vs. returns from standing timber, and disorganized marketing methods, were defined by the industry's representatives as the three major factors adversely affecting its stability and calling for immediate attention. In keeping with its purpose to develop remedial recommendations for the stabilization of the forest products as a whole, it was proposed that the Timber Conservation Board appoint a special committee to survey the naval stores industry.

The naval stores survey committee, as proposed, would be charged with the responsibility of studying conditions as outlined and with making recommendations for public and private action to rectify them. The actual appointment of the committee will depend on whether or not the industry itself feels such action is desirable.

Under the plan as discussed at the hearing the naval stores committee, cooperating with the Timber Conservation Board, would concern itself mainly with the production and consumption ratio, and the timber land tax situation. The industry will be responsible for developing more orderly marketing methods.

The Timber Conservation Board already has made studies in the lumber industry as a part of its program to establish and maintain an economic balance between production and consumption of forest products, and to develop a deliberate plan of forest conservation. Similar surveys, to be made by the Board, have been requested by the pulp and paper industry.

The naval stores industry was cited by those present at the Board's hearing as the economic key to successful reforestation of southern yellow pine timber lands in the southeastern states. It is only by the growing of trees suitable to the production of turpentine and rosin that the vast acreage of idle lands in this section can be made to return an income, it was said.

Naval stores producers, factors, distributors, professional foresters, private and government economic experts, timber land owners, and representatives of the forest conservation movement attended the hearing.

Wood for Pennsylvania Unemployed

Relief of distress among unemployed in northwestern Pennsylvania, who are without winter fuel, is made possible by the Water and Power Resources Board in the Pennsylvania Department of Forests and Waters, according to an announcement by Lewis E. Staley, chairman of the Board.

Mr. Staley has issued instructions that wood will be available at the site of Pymatuning Dam in Crawford County, where construction has recently been started on the new reservoir,

which when completed will be the largest artificial lake in Pennsylvania.

Many acres of timber with little or no commercial value must be cleared at the reservoir site. Unemployed in need of fuel will be permitted to cut wood for home consumption upon application at the office of the resident engineer in charge of construction at the site of the dam located about one and one-half miles north of Jamestown. No free wood permits will be issued to those who wish to sell or exchange wood products. There is assured an ample supply of wood for those who may apply for cutting permits.

Three Million Visit National Parks

More than 3,000,000 persons visited the National Parks during the past year, Horace M. Albright, director of the National Park Service, has announced.

The total number of visitors for the year just ended was 3,152,845 as against 2,774,561 for the previous year. For the sixth consecutive year Yosemite National Park led in numbers, with 461,855 visitors.

Travel to the thirty-four National Monuments under the administration of the National Park Service declined seventeen per cent, Mr. Albright stated. Many of these monuments are in the southwest, he explained, and a very hot summer combined with poor road conditions are believed to be responsible in part for the decline. The total travel to the National Monuments this year amounted to 392,011, while that for last year was 472,095.

Though travel to the National Monuments declined, Mr. Albright pointed out that the increase for the National Parks sufficiently offset this to bring about a nine per cent increase for combined park and monument travel. The total was 3,544,856 this year as against 3,246,656 last year.

Repeating last year's achievement, the Petrified Forest National Monument in Arizona led the monuments in the number of visitors with a total of 93,898. Muir Woods National Monument, a noted redwood grove in California, was second with 73,717.

Move Giant Tree

The United States Government will pay nearly \$5,000 for moving a giant magnolia tree in Washington as part of its \$100,000 program for improvement of the Mall. The magnolia is thirty-six inches in circumference at breast height and will be moved 400 feet from its present location. It is said to be one of the biggest jobs of its kind in the world. According to Lieutenant Colonel U. S. Grant, 3d, Director of Public Buildings and Public Parks, the Government will spend nearly \$13,000 for moving thirty-one trees and improving the condition of a dozen more in the beautification plan.

Huge Decline in Lumber Production in Idaho and Montana

The largest drop in lumber production since 1921 occurred in Idaho and Montana in 1930, as compared with 1929, according to a statement issued based on returns from lumber census conducted jointly by the Bureau of the Census and the Forest Service. The decline of 280,000,000 feet in total lumber cut amounts to eighteen per cent in Idaho and twenty-four per cent in Montana, the figures reveal.

Decreased production, amounting to approximately ninety-six per cent of the total shrinkage, resulted largely from curtailment in the cut of western yellow pine, larch, Douglas fir, and white fir, which collectively constituted fifty-seven per cent of the total lumber cut. Comparative cut figures for spruce, cedar, lodgepole pine and western hemlock also show a marked decline in production, although these four species contributed less than three per cent of the total output for 1930.

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Enlarge Rocky Mountain Station

All research work for the Northern Region of the United States Forest Service has been consolidated in the Northern Rocky Mountain Forest and Range Experiment Station near Missoula, Montana, it has been announced.

This consolidation will make no radical changes in personnel of those investigative units which have been functioning, it is stated. Lyle Watts has been appointed director of the station; R. H. Weidman will continue in charge of all forest management studies; and M. I. Bradner, in addition to handling the investigative work in forest products, will take charge of work in the Northern Region for the newly launched forest survey.

Additional work following the consolidation will include, according to the Forest Service, expansion of the much needed investigations into forest fire protection problems, and research pertaining to methods of utilizing forest ranges and handling livestock. This latter work will, however, be confined, for the present at least, to such projects as can be handled in cooperation with the Bureau of Animal Industry at the United States Range Livestock Experiment Station at Miles City, Montana.

Check-up of Water-Power Values Is Planned on National Forests

Classification and study of all lands in the National Forests having water-power values is scheduled for the near future, the Forest Service has announced.

It has been estimated that the National Forests include one-fourth of the power resources of the United States, but this estimate may be somewhat in error because of lack of basic information on streamflow, head and other pertinent factors.

The Forest Service will first undertake to determine the location and power capacity of National Forest lands having power values. Available statistical information will be assembled and converted to terms of international rating standards. The plan also provides for a review and study of land now under power classification or withdrawn for power.

Through this study the Forest Service hopes to provide a basis for long-term planning of the handling of land having water-power potentialities and to permit National Forest administration which will assure utilization of the lands for their highest public values.

Idaho School of Forestry Recognized

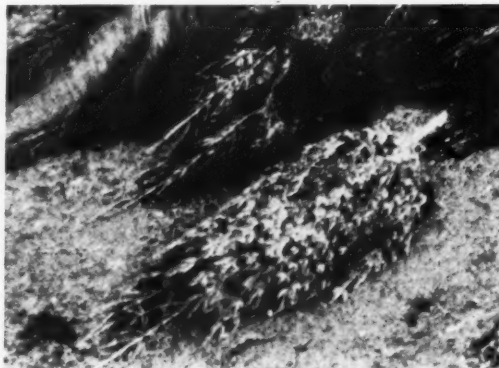
In recognition of its work in forest research, the School of Forestry, University of Idaho, has been elected to membership in the International Union of Forest Research Organizations. Notification came from Dr. Sven Petrin, the secretary general at Experimentalfaltet, Sweden.

The International Union was established in 1929 and has as its aim the promotion of international cooperation in the various branches of forest research. It comprises more than eighty forest research organizations in thirty countries. Seven other institutions in the United States in addition to the Idaho School of Forestry now belong to the Union.

Dead Chestnut Trees Have Value

The rapidly dying chestnut trees need not become a complete loss in the regions where many have been used for poles, timbers, ties, and lumber, if the consumers will increase their use of chestnut lumber and other products. Blight-killed timber can be salvaged if taken before decay has gone too far.

Plant pathologists of the United States Department of Agriculture, following a detailed study of the deterioration of the chestnut in several areas in the Southern Appalachians, find it is possible to manufacture lumber from dead standing chestnut for at least four years—often ten years or more—after death of the trees.



TO AN UNUSED CHRISTMAS TREE

(Villanelle)

I sighed to see you lying there,
Sad and alone this holy night,
While your companions blossomed fair.

In happy homes unknown to care
They all were visions of delight.
I sighed to see you lying there.

Yours was the cold, the bitter air,
And yours the darkness and the blight,
While your companions blossomed fair.

They glowed with gems and jewels rare,
And they with blazing stars were bright.
I sighed to see you lying there.

The wind seemed to your sorrow share
And, singing, sought to soothe your fright,
While your companions blossomed fair.

I longed to comfort your despair,
To aid your sad, your sorry plight,
I sighed to see you lying there
While your companions blossomed fair.

—F. L. HIGGINS.



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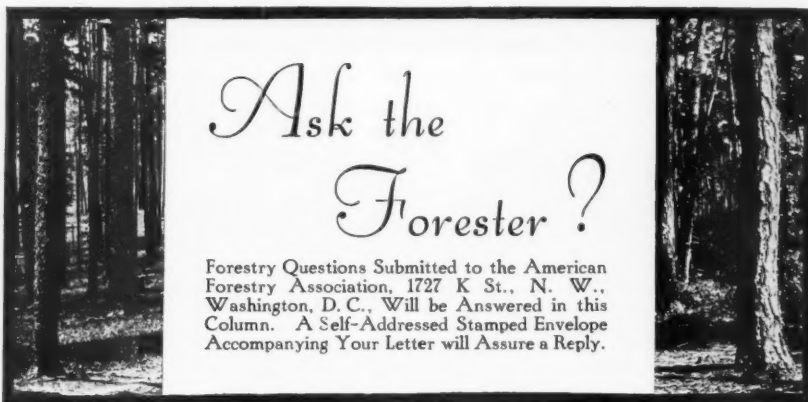
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QUESTION: Why is it that lightning is so bad around a fire tower, and why does it not kill a man? I have read where so many have escaped death from lightning when it has struck one on a fire tower.—K. S., *Pennsylvania*.

ANSWER: A fire tower standing up on top of a mountain, or other elevation, is an attraction for lightning and to a considerable extent is a natural lightning rod. The electric currents are carried down along the outer steel scaffolding to the ground. The base of the tower is always deeply imbedded so that it is actually well grounded. The few men who have remained in a fire tower during a severe electrical storm without injury had an experience which they do not wish to repeat, even though the lightning currents for the most part went around rather than through them. Fire guards usually abandon their tower whenever an electrical storm is on.

QUESTION: What is the effect of trees and foliage upon the eyesight?—H. L. H., *Maryland*.

ANSWER: The foliage of trees is primarily adapted for the purpose of absorbing energy from sunlight, for creating food through the process of photosynthesis. Accordingly, the amount of light reflected from typical foliage of trees is fairly low, and the reflected light is usually soft and therefore easy upon the eyes.

QUESTION: What is the general health-giving value of deciduous and evergreen trees?—H. L. B., *Florida*.

ANSWER: There is no particular choice between deciduous and evergreen trees as they affect general health. Probably their greatest benefit to health is indirect, as through their preventing erosion and subsequent silting of streams, with the occurrence of stagnant water and unsanitary conditions. Trees ameliorate extremes of climatic conditions, create more uniform streamflow and keep streams more clear than in a denuded country.

QUESTION: During a motor trip in Michigan we noticed the trees were all dying along the unpaved roads where calcium chloride is used to keep down the dust. As soon as we reached the paved roads or dirt roads where it was not used the trees were green. We would like to know if the calcium chloride is responsible.—J. H., *Illinois*.

ANSWER: Scientists in the Department of Agriculture who are working with various

plant poisons agree that while calcium chloride is poisonous to plants, it seldom if ever causes the death of any number of trees along the highways. The principal function of calcium chloride is to absorb moisture and thus keep down the dust. After it has absorbed moisture it rapidly loses the poisonous qualities. Plants and occasionally trees are killed close to the roadside, but this influence seldom extends more than two feet from the roadbed.

Perhaps much of the tree loss reported is due to the excessive drought which has prevailed for the past two seasons. Last year's drought, followed as it was in parts of Michigan by another season with little rain, has caused the trees to suffer.

QUESTION: I am interested in reforestation some sixty-five acres of land in Wisconsin. This land is in the hardwood belt and has been heavily pastured. I desire to reforest with hardwoods. There exists a stand of mixed birch, oak, basswood, ash and butternut—all large trees. There is no undergrowth of young seedlings. Would it be better to purchase seedlings, or raise our own from seed? Where can such seed be secured? Should seeding be done in the places where the trees are to stand, or in a nursery? What is the correct spacing for different trees, and times and methods of planting, and any other information you might feel as relevant to such a project?—N. W. R., *Wisconsin*.

ANSWER: In order to break up the hard-packed soil a number of hogs might be turned into the tract to root and tear up the ground during the coming winter and spring. This would prepare the ground for the fall of seeds of another year and help secure a large amount of reproduction.

The future stand can be largely developed through encouraging natural reproduction and thinning any existing stand of young trees. Basswood and ash should be favored.

If you are not satisfied to wait for nature and wish to plant seedlings, you may be able to get them from nurseries, but you will probably have to grow them. It would be desirable, however, to get in touch with your state forester and with your extension forester at the College of Agriculture.

Satisfactory seed of such hardwoods as you would wish can be secured from a few commercial seedsmen. These are grown in a nursery after the manner described in Department of Agriculture Farmers' Bulletin No. 1123, "Growing and Planting Hardwood Seedlings on the Farm."

The trees need not be planted closer together than six feet, and wider space is recommended where there is any considerable amount of natural growth.

CONSERVATION AND THE 72nd CONGRESS

CONSERVATION along with virtually every other Federal activity is expected to undergo the acid test of economy in the session of Congress which convenes this month. Severe reduction of appropriations undoubtedly threatens forestry and other conservation activities. Details concerning the extent to which different projects may be curtailed have not been made known. The first authoritative indication of the detailed extent of the Administration's retrenchment program will come early in the session when the President will submit to Congress the recommendations of the Bureau of the Budget.

That the Government will be forced to extraordinary measures to balance its budget this year is well known and conservationists generally apparently do not look to Congress this winter for new legislation that will increase the financial obligations of the Government. In a recent conference with representatives of The American Forestry Association the Director of the Bureau of the Budget indicated quite clearly that the financial situation is so serious that drastic cuts in present appropriations will be necessary wherever it is possible to make them. Interest on the public debt and payments to former soldiers, he pointed out, constitute an overhead of about \$2,000,000,000, which it is difficult if not impossible to reduce, so that other Federal activities, it appears, will have to bear the brunt of the pruning knife.

The Director, however, stated that an effort was being made to maintain appropriations at a point that will at least make it possible for the Government to maintain its personnel organizations. Appropriations for forestry activities, with the possible exception of forest acquisition, include large percentages for the payment of wages and salaries. This is particularly true for forest fire protection in co-operation with the States under the Clarke-McNary law, for the protection and administration of the National Forests, and for research. Even the sum spent for purchasing forest lands include the employment of trained examiners and appraisers and the money paid by the Government in purchasing forest lands goes into circulation and thereby contributes to local unemployment relief.

The extent, if any, to which the employment situation, however, will enter into the conservation allotments for the coming year is at this time speculative. It is believed that the Administration's policy will be based somewhat upon protecting the Government's forest properties and holding its trained organizations. New development will probably suffer and the outlook for the acquisition of National Forests in the east is toward a retrenchment. The current appropriation for this work is \$2,000,000. Speaking for The American Forestry Association, George D. Pratt has urged upon the Director of the Bureau of the Budget that this appropriation be not reduced below \$1,000,000 for the next fiscal year and that this reduction be considered purely temporary to meet an emergency. This sum, it is pointed out, will be sufficient to retain the trained personnel employed in the forest acquisition work and to permit it to function. In the event, however, a cut is recommended that will seriously threaten the Government's acquisition policy, the Association, it is said, will plead its case before the appropriation committees of the House and the Senate.

In addition to the uncertainty which rests over Congress in respect to appropriations for conservation, there is a high degree of speculation as to new legislation that will enter into the congressional mill. It seems certain that one of the most spectacular measures to appear will be the legislation proposed by President Hoover's Commission on the Public Domain. The President has said that he will send the Commission's report of recommendations to Congress with his support. This is interpreted as clear evidence that the Public Domain will be much in the legislative limelight.

In point of constructive legislation, according to many conservationists, the bill to be proposed by The American Game Association will undoubtedly stand out. This proposal calls upon Congress to enact legislation creating a fund of \$25,000,000 through the issuance of public bonds at the rate of \$5,000,000 annually for five years, the money to be used in purchasing, leasing and maintaining migratory bird breeding grounds and to retire the bonds from funds collected from a \$1 Federal license tax on hunters of migratory game birds. The extent to which hunters throughout the country may object to a license tax of \$1 on migratory birds and thus oppose the legislation is not known, but the Association expresses the belief that the measure will not meet great opposition. This prediction is based upon the critical situation now confronting the migratory wild fowl of the United States and Canada and the need of remedial action.

The Englebright bill which was before the last session of Congress is expected to be introduced again. This measure would set up appropriation authorizations that would give added protection against fire to the National Forests. Another measure bearing upon the National Forests which will probably come under consideration by Congress is one to give definite authority to the Forest Service for the development of recreation. Current appropriations for this Federal activity now amount to \$67,000, which is declared to be inadequate to provide necessary camp grounds, sanitation facilities, fire protection and general administration for the thirty-two million people now visiting the National Forests annually. Congress will also be asked to pass a new authorization for the purchase of forest lands under the Weeks Act and the Clarke-McNary Act. The current authorization of \$3,000,000 expires this year.

Advocates of Federal aid to State parks have served notice that the McNary-Englebright bill possibly with some amendments will be reintroduced in the new Congress. As introduced in the last two sessions of Congress this bill would set up a commission to be known as the Federal Aid Park Commission, consisting of the Secretaries of the three Departments of the Interior, Agriculture, and Labor, two members of the Senate and two members of the House, to cooperate with states in acquiring and establishing State parks. An appropriation of \$5,000,000 annually would be authorized with the proviso that not to exceed fifty per cent of the estimated cost of state park land shall be payable from Federal funds.

The measure introduced late in the last session by Senator Norbeck providing for the elimination of some forty thousand acres from the Harney National Forest, South Dakota, as an addition to the Custer State Park, is another state park measure that may again be pressed.

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In the field of National Parks legislation, the Everglades National Park, it is said, is sure to be on the legislative calendar. It is also reported that the Ouachita National Park measure, designed to create a National Park from lands in the Ouachita National Forest, may again be presented. It is known that a number of proposals are under consideration looking to extensions to existing National Parks in the West. These involve areas now included in National Forests. Among the proposals under consideration are an extension of the Yellowstone National Park to include the Upper Yellowstone and Thoroughfare Creek watersheds; an addition to the Teton National Forest to include land lying to the east in Jackson's Hole; an addition to the Crater Lake National Park to include areas to the north embracing Diamond Lake; and an addition to the Grand Canyon National Park to extend its southern and northern boundaries. The long-standing proposal to make the King's River Canyon of California a National Park may, it is said, reach a legislative stage this session. Secretary Wilbur has expressed himself as strongly in favor of this park and believes that the irrigation and water power questions involved can be satisfactorily met.

New Patron for Nut Tree Project

A new patron has been added to the list of conservation-minded persons who by their support have made possible the National Nut Tree Planting Project. The Wilkins-Rogers Milling Company of Washington, D. C., producers of Washington Flour, have made the equivalent of a substantial donation by supplying containers for the shipment of nuts to persons who are participating in this conservation program. The procuring of suitable containers for the shipping of nut seeds has been one of the most serious problems the Council in charge of the project has had to face, according to the chairman, C. A. Reed, pomologist of the Department of Agriculture, both because of the expense involved and difficulties in handling less than bushel lots. The flour bags furnished by the Wilkins-Rogers Milling Company as a contribution to the project are sturdy enough to carry several pounds of seeds and light enough to require a minimum amount of postage.

Billboards to Be Removed from Adirondack Park

All advertising signs are to be removed from the 4,600,000 acres comprising the Adirondack Park, according to announcement today by the State Conservation Commissioner, Henry Morgenthau, Jr.

The conservation law, he stated, expressly forbids the erection or maintenance within the boundaries of the park of "any advertising sign of billboards," the sole exceptions being signs maintained under written permit of the Conservation Department and "signs erected or maintained upon property in connection with a business conducted thereon, or within the limits of an incorporated village."

American Game Conference in December

The eighteenth American Game Conference will be held at the Hotel Pennsylvania, New York, December 1 and 2, it has been announced by the American Game Association. The developments under the game policy adopted by the Conference last year, the waterfowl situation, the progress of wild life research, and game rearing work will feature the meeting.

The program announces the following topics for discussion:

A symposium on game management: Promoting private initiative in game management; the farmers' interest in a game crop; demonstrating in upland game management; the waterfowl situation and its solution; and protectionist relations in wild life programs.

A symposium on game breeding: New developments in grouse breeding; quail breeding progress; pheasant breeding developments; progress with the European grey partridge; and laws to encourage game breeding.

General discussions and reports: Replacing the game we take; America's game fish program; wild life disease studies; research progress during the year; and progress of ruffed grouse and prairie chicken studies.

The annual banquet will be held at the hotel, the evening of December 2. The principal speaker will be United States Senator Key Pittman, of Nevada, member of the Special Senate Committee on Wild Life Resources.

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THE FRUIT OF THE TREE

(Continued from page 733)

He expected that this would settle the matter.

"Much obliged, Mr. Unger, but I don't want no time." The little man's voice droned monotonously. "I see Peter Sayre after I left you and I'm figgering to move onto his place tomorrow—Christmas. I ain't asking no favors and I ain't giving none."

Phinney stooped and carefully retied the thong that bound one of his snowshoes. Unger struggled with a growing belief that the other intended to leave him to die. He would have to beg, but it was a bitter pill to swallow.

"Phinney," he began, "I—I'm kind of sorry about this morning. Mebbe I ought to have been easy on you. Tell you what I'll do—I'll give you a hundred dollars, cash money, to get this tree off me!"

Then Nahum Phinney straightened up and increased in stature until he was no longer like a rabbit. With blazing eyes he pointed one mittened hand at Unger.

"You ain't fit to live!" he thundered. "You ain't as good as that tree you jest cut down! A tree don't go agin its kind like you do. What's God or Christmas or kindness to you? You was going to turn my sick baby outdoors like I wouldn't turn a sick dog out! It's wuth more to get the doctor quick for my little Emmy then it is to help a feller such as you be! God Almighty ain't got no use for critters that turns sick babies into the snow! I ain't, neither! Freeze, damn ye!"

Phinney turned and started off with swinging strides. Unger, dazed and sickened and despairing, listened as the flap of the snowshoes grew fainter and finally died away. He was doomed. A groan of impotence and self-pity shook him. Then the meaning of all that Nahum Phinney had said began to take shape in his mind until it stood out as sharp and clear as the snow crystals before his eyes. For the first time in his life he wondered if God and such things did make a difference.

Unger did not know whether minutes or hours were passing but he lay quietly and waited for the end that he could feel descending upon him. He was too weak to struggle now. He did not blame Phinney much. His greatest concern was for Martha, his wife, and that concern took hold upon trivial things. It must have hurt her when he compared Christianity to "spoon vittles," for that was the most contemptuous comparison he knew how to make. There were other things, also, and so full was his mind that when the flap of snowshoes first came to his ears he doubted that the sound was real. Then his head was lifted and the voice of Nahum Phinney spoke in its accustomed tones.

"I'm awfully sorry, Mr. Unger," it said. "I didn't understand jest what I was a-doing, going off and leaving a human being like that. It was an awful mean thing to do and I hope you won't lay it up agin me. It wa'n't Christian, nohow."

Esau Unger said not a word as Phinney spread a coat beneath his head. The pinioned man was trembling from cold and exhaustion but these were not what kept him silent. He was thinking with a kind of awe of the thing that had brought Phinney back to the aid of an enemy when his child lay ill. This thing would have been foolishness to him a few hours before but now it began to take hold upon his feelings and slowly upon his understanding.

"It ain't nigh so bad as I figgered, Mr. Unger," announced Phinney cheerfully, as he pulled off his mittens and picked up the ax. "You jest keep your courage up and I'll have you out in two shakes. Ain't no bones broke, be they?"

"No," answered Unger. Phinney's patter of encouragement was wonderfully grateful to

him and he marveled at his own thoughts. Christmas and Christianity and Nahum Phinney went together he had said to his wife that morning. Now he remembered the words with astonishment at their new meaning. He heard the chug of the ax with a warmth in his heart for the despised little man.

Talking and working with equal rapidity, Phinney, now freed from his snowshoes, kicked the snow away from the limb between Unger and the fork. Then he put down the section of a thick branch that he had cut and over it worked the end of a strong pole until that end was well under the limb that held Unger imprisoned. It acted as a perfect lever.

"If I was as big and strong as you be I'd jest take one hand to this and pull you out with the other," chattered the rescuer, "but I ain't, nowhere near. 'Spose you can crawl out when I pry on the limb, Mr. Unger?"

"Yes," replied Esau Unger, and shut his teeth with the grim realization that he must drag himself out or most likely perish. Phinney threw his small weight and strength onto the end of the lever, the limb yielded and moved upward ever so little, and Unger, digging his clumps of hands into the snow, prayed for the first time in all his life for that which he had believed was his inalienably—strength. His great arm and breast muscles contracted. Slowly his body moved while the little rabbitman, at the end of the pole, bore down and panted and clawed for a foothold in the snow. Unger drew himself up on his hands and knees only to fall down again. But he was free.

It was minutes before Esau Unger could stand upright, and half an hour before he could walk without an arm flung over the shoulder of Nahum Phinney, who had continued to gossip cheerfully.

"You better change all your clothes jest as quick as you get home, Mr. Unger," he advised, "and soak your feet in mustard water tonight. If it wa'n't for little Emmy I'd go clear home with you. I'd jest as lief go anyway, if you want me."

"You hustle right along after that doctor!" ordered Unger, with a touch of his old manner. "Well, I guess mebbe I'd better," replied Phinney.

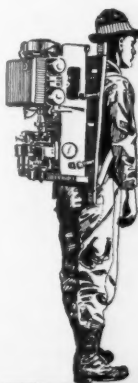


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He hurriedly bound on his snowshoes and started up the slope of the spur.

"Much obliged, Nahum!" Unger called. "Almighty much obliged!"

Phinney turned and waved his hand; and there was something shining in his face that the other man had not seen there before.

Unger tightened the belt of his jacket and went down toward the valley that he had thought he would never see again. The chill was rapidly going from him and his blood warmed. He drew deep, grateful breaths as he climbed the fence into the back pasture. There at hand stood the clump of small spruces, one of which Martha had wanted to make a Christmas tree for Nahum Phinney's children.

Esau struck off a tree with a blow and went on toward home with the green limbs dragging behind him in the snow. Sight of the kitchen door was pleasant and he remembered that Martha had wanted to have it painted the fall before. He felt sorry that he had not let her buy the paint; and as he made ready to go into the kitchen he carefully kicked the snow from his feet.

Martha Unger had just finished baking and

Esau glimpsed many brown loaves and fat pies on the pantry broadshelf. His wife turned from the stove and gazed at him.

"What's happened?" she cried. "What brought you home at this time of day, and all over dirt?"

"Nothing much," he answered, awkwardly. "I brought down that Christmas tree for the Phinney young'uns."

"Good land of Goshen!" The pie knife slipped out of her hand and clattered to the floor.

"Just as quick as I change my clothes," he went on, doggedly, "I want you to pack up some pies and truck and go over to Nahum Phinney's with me. Might take along a hunk of beef, too. One of the little gals ain't very well and Nahum's gone for the doctor."

It was plain that Martha Unger's world was trembling. She sat down limply in a chair.

"Esau Unger, you're sick!" she cried. "You better go right straight to bed!"

"I ain't sick, neither!" Esau bristled, but he avoided his wife's eyes. "Ain't a man got a right to help his neighbors, I'd like to know? Ain't they human critters, jest like us?"

A FOREST PAGE FOR BOYS AND GIRLS

(Continued from page 744)

again separated. Our experience with this has not been very encouraging.

The pulp is mixed thoroughly in water in the tub and kept agitated with a flattened stick. The mould is then plunged into the pulp at an almost perpendicular angle until submerged, then turned and lifted horizontally from the vat, leaving a felt sheet on the screen. But before lifting completely from the pulp, the mould is shaken first from side to side, then up and down in order to spread the pulp evenly, also to cause a suction that packs and interlocks the fibers. After allowing the water to drain off, the sheet of paper is transferred to the felt. This is called couching. The deckle is removed and the screen with the paper adhering is pressed evenly against a felt pad. The paper will adhere to the pad when the screen is removed. The irregular edge made by the deckle is called deckle-edge. After a number of pieces are made and placed one on top of the other with a piece of felt between, they are placed under the press and pressure applied for half an hour to remove the water and press the fibers more compactly. Then the sheets are removed to dry. The quality of the paper may be improved by placing one sheet upon the other,

after the first pressing, and resubjecting the pile to light pressure. The paper is dried by hanging on wire in a well ventilated room. Thus we may make paper by hand as the ancients did. If you wish to add charm to the sheets add a little colored yarn or artificial snow to the pulp in the mould. Of course you should see that it is well distributed.

The making of paper by this simple method became a great trade with workers who became very skilled in the art. Guilds were formed of the workers for the promotion and protection of the craft. The man who handled the mould was known as a "vatman"; the "coucher" removed the paper from the mould to the felt, while the "layman" went on with the procedure.

Methods have changed with the modern mill but the materials and principles remain the same. Through the steady march of progress the vat, mould, press and drying room have been replaced by marvelous machines that increase the output many thousandfold. But it is doubtful if any paper made today will stand the ravages of time as did the product of the early days, when paper making was an art.

PISGAH FOREST AIDS UNEMPLOYED

(Continued from page 736)

sounds of activity began again. The work of the community woodyard at Bent Creek was orderly and efficient.

In the meantime another remarkable thing had happened. The woodyard committee had succeeded in building up the market for firewood. Their first step was to sell it at a low price, since their object was not to make money, but rather to run the business so that it might be as nearly self-supporting as possible. The prevailing price of wood in Asheville had been about ten dollars a cord and its use had not been generally popular. So the committee decided to offer select wood sawed and split to the customer's order, delivered to his home and piled in his basement or woodshed, at five dollars a cord, and to extol its virtues as fuel.

Full-page advertisements, published free by local newspapers, appealed to the public to buy firewood and help the unemployed. They called attention to the fact that wood could be used in ordinary furnaces as well as coal and that on mild days, when just a flash of warmth is

needed, it is better than coal. The cleanliness of wood both in the furnace and in the fireplace, particularly in a community where soft coal is commonly used, was emphasized. Daily announcements were made over the radio and ministers encouraged their congregations to support the work. All the charitable organizations in town cooperated. The Junior League offered for sale at auction a cord of wood which had been stacked for a week, as an advertisement, on one of the city's busiest corners. It brought fifty dollars and the buyer gave the wood to one of the needy families. A woodyard dance was held to increase interest in the project. It soon was demonstrated to the people of Asheville that the community woodyard was doing a great deal toward solving the problem of unemployment. They supported it wholeheartedly. During the war it had been "Do your bit"; now it was "Buy a cord of wood and help a needy family."

By the last of February all the trees that had been marked during the summer had been

cut. But it was still winter, the unemployed still needed help, and the market for firewood, built up by the woodyard committee, was not only holding up, it was growing. The workmen at the yards in town were demanding twenty cords a day. It was a fine chance to do still more experimental cutting at Bent Creek. So the experiment station men marked two more units. On one they favored yellow poplar, and on the other chestnut oak. These units, totaling about fifteen acres, held the woodcutters only two weeks. Dead, dry oaks are hard to chop but they make good firewood once they are ready. Many big old veterans that had been killed during the drought of 1925 were still standing along a rocky ridge, and these, too, were given to help along the cause.

With the approach of April came warmer weather, and less need for fuel wood. The welfare committee had prepared for the change with a gardening project that provided spring employment in mowing lawns or spading flower beds. The last wood was hauled in on March 25. Thus in a serious emergency the com-

munity had made the most of an opportunity to help itself without the humiliation of a soup kitchen or bread line, and at almost no cost to the city or county, 1,300 families had been cared for from Christmas to April, and best of all, every man of the 1,300 had preserved his self-respect, for none had received a dole.

Furthermore, the cuttings at Bent Creek will contribute to the knowledge of better forestry practice in the Southern mountains. Altogether about 900 cords were cut on the experimental forest. Each of the experimental cuttings were executed in almost perfect fashion and the methods employed should yield valuable information in years to come to aid the foresters in the rehabilitation of worn-out mountain hardwood stands. This better forestry practice will benefit not only the Asheville community, but the whole Southern Appalachian region.

And so the Asheville community in solving its problem of unemployment has not only done good to itself, but it has contributed to better forestry and to country-wide improvement.

THE SOUTHERN RAILWAY TURNS TO FORESTRY

(Continued from page 748)

have sprung up and attained a height of from eight to ten feet. Two years ago a cotton crop was made in a field where there is now a fine stand of loblolly and longleaf pine. These young trees, germinated from seeds blown from the surrounding woods, are from eighteen inches to two feet in height. In this same field there are several magnificent specimens of the new hybrid pine which, foresters think, holds so much promise for the future because of its phenomenally rapid growth. Although planted with slash seedlings, the native growth in this field will be left until thinning is necessary, when the loblolly will be taken out for pulpwood. For the vast amount of reforesting that has been done here the seedlings have been grown on the plantation. The nursery presents several very interesting points of divergence from other nurseries observed in the State. The seeds are planted in drills crosswise the beds and are not protected by slats for shading or sideboards and wire netting from marauders. The plants are watered only when rains descend. Yet it would be hard to find a more luxuriant growth of seedlings, eighteen to twenty inches high.

When that first little railroad was built through the country surrounding Pregall—Forty-one as it was then called—the primeval forests were thickly populated by birds and beasts. Turkeys roosted in the treetops, partridges roamed in droves over the thick carpet of resinous needles, and deer, opossum, raccoon, foxes and wildcats could be found in

great numbers. Exciting bear stories are still favorite traditions in many families. But many of these children of the wild have long since given way before advancing civilization.

One feature of the undergrowth seems worthy of mention in connection with the work of reforestation. Covering the ground under the trees, like grass on a lawn, is a dense growth of shrub oak. The height of these oaks is perhaps twenty inches, but the wood and leaves are very much like those of a water oak. No doubt the fruit of this shrub is an appreciable factor in keeping the wild turkey there from year to year.

At Demonstration Forest, the model village where Mr. Turner and the forester in charge live with their families, the houses are set back from the highway behind a beautifully kept park. On a back street the quarters of the negro workmen make a most attractive picture against the dark, forest green. A turpentine distillery and an office building are located across the road from the village. All the naval stores gathered on the place are prepared for market here, and are shipped from the station at the village.

The experiment has emerged into the realm of achievement. It is already self-supporting. Within twenty years, when the slash seedlings have had time to get to work, who knows but that this effort on the part of a large business enterprise will be showing a balance on the right side of the ledger.

BRITAIN'S RISING ARMY OF TREES

(Continued from page 730)

imports were depended upon increasingly. Before the war private plantings varied from 10,000 to 20,000 acres a year. From 1914 to date, at a steadily growing rate, woods have been felled and little or no planting done. Near population centers and in areas of maximum utility there are few trees other than of pit wood size and most of the coniferous timber has been cut.

Factors that have contributed to the decline of private forestry include the division of large estates into small holdings, a process that resulted in the destruction of small woods; arrears of work and reduced incomes; high taxation and the resultant hardships involved in long rotation crops; the doubling and even trebling of planting costs, and increased railway rates, making the sale of thinnings unprofitable. In some cases, where an estate was

split, farmers burned out five and ten-year-old plantations to provide sheep grazing because the trees represented no immediate value.

In spite of scattered plantings and the lack of any direction in the past, England owes a debt of gratitude to the men who, with more foresight than the government, were busy setting out trees in the 1860's. It was the plantations they established that furnished the bulk of wood used during the war and enabled the country to use its limited shipping to import food instead of timber, which obviously takes up more space. The state now recognizes that, in view of the lesson learned in the war, trees represent a better economic use of land than, say, sheep grazing. Its opinion is summed up in an official report:

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people ultimately depends on imports from abroad. Imports in turn depend on shipping. In 1917, when the submarine menace was at its height, the Prime Minister stated that despite every effort timber still absorbed more shipping than any other import and that, if tonnage were to be saved for food, etc., the problem of a supply of timber from home woods was the first which must be attacked."

The program for the second decade was even more ambitious than for the last. It called for the acquisition of plantable land at a uniform rate of 60,000 acres a year and the planting of 353,000 acres of state forest. The 1931 plantings have gone forward according to schedule but the Commission will suffer a serious handicap in 1932, owing to stringent economies made necessary by the balancing of the government's budget. All departments have been affected by the so-called "guillotine measure" and the Forestry Commission is suffering along

with the rest. Its budget has been slashed virtually in half. Instead of the expected Parliamentary grant of some £900,000 (\$4,500,000) it will receive £422,000, a reduction of £478,000, or roughly, \$2,390,000. To the amount available from the government, however, will be added the forest receipts.

Just what form the economy will take has not yet been decided but every effort is being made to devise a plan that will entail the least possible loss to the program. If plantings are curtailed, the Commission will be obliged to take a loss in the nurseries, where thousands of sturdy seedlings will have reached the plantable age. It is possible that the Commissioners will arrange to "carry on" as far as the actual planting program is concerned and curtail land acquisitions. But just now they cannot say. The problem is being studied in every detail.

New York's Christmas Trees

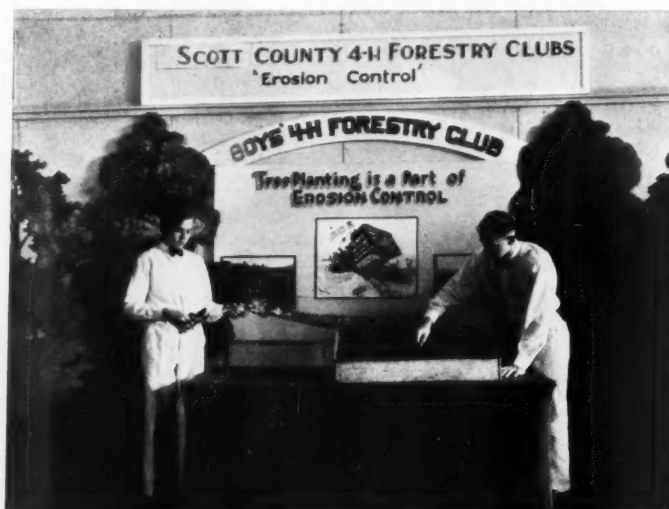
An experimental Christmas tree plantation, the first of its kind to be operated by the State of New York, is being planted on a new reforestation area in Livingston County, north of Canaseraga, according to Conservation Commissioner Henry Morgenthau, Jr. On a 587-acre farm recently acquired for reforestation by the Conservation Department, ten acres are to be devoted to Norway spruces for Christmas trees.

The department has been advocating for some time the growing by private landowners of young evergreens to be sold when six to ten years old for Christmas trees in order to prevent the destruction of valuable forests for that purpose. The object of the plantation near

Canaseraga is to show landowners how this may be done profitably.

Whereas trees for reforestation are planted six feet apart in rows of the same spacing, the spruce transplants for Christmas trees will be planted three feet apart, adding 3,600 trees to the acre. The ten-acre plot to be planted in this manner on the experimental area will thus grow more than 40,000 trees. If it is decided to replant as young trees are cut, the plot may be kept in permanent production, yielding an annual crop of 4,000 to 8,000 Christmas trees. Or it may be retired from Christmas tree production after it has served its education purpose and left with a standard planting of forest trees.

Iowa Boys Demonstrate Tree Planting



The winning team from Scott County—Kenneth Rueffer, at the left, and Grover Hahn, at the right, demonstrate how trees are used to control erosion.

That forestry has a definite place in Iowa's agricultural program is proved by the fact that three 4-H forestry club teams won high places in recent fairs at Davenport and Des Moines, Iowa. "Tree planting as a part of erosion control" was portrayed and proved by Kenneth Rueffer and Grover Hahn, Iowa farm boys from Scott County. Extension Forester I. T. Bode reports that the exhibit and demonstration presented by these boys won them first place

among 4-H club exhibits at the Mississippi Valley Fair and Exposition at Davenport and third place at the Iowa State Fair at Des Moines.

Lloyd Ritchie and William Grandia, of Mahoska County, won second place with a similar exhibit at the Iowa State Fair, and Horace New and Robert Procter, of Story County, won recognition with their exhibit and demonstration of farm windbreak planting.

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The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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**"WHO'S WHO" AMONG THE AUTHORS
IN THIS ISSUE**

R. F. HAMMATT (*The Red Drama of America's Inland Empire*) is assistant regional forester in charge of Public Relations, in Region 1, United States Forest Service, with headquarters at Missoula, Montana. First entering the Service in 1906 he served in Oregon and California, as forest supervisor and in public relations work. In 1921 he resigned to become secretary of the California Redwood Association, returning to the Forest Service in 1931. He was born in Massachusetts, and was graduated from the Harvard Forest School in 1906.



R. F. Hammatt

ARCHIBALD RUTLEDGE (*Christmas in the Forest*) is well known to readers of AMERICAN FORESTS, having contributed throughout a number of years. An author and conservationist of national repute, he has written much of his native outdoor South. He was born in South Carolina, and spent his boyhood in his beloved "low country." He now makes his home in Pennsylvania. The best known of his books are *Children of Swamp and Wood* and *Days Off in Dixie*. He has also published several books of verse.



George D. Pratt

Mr. Pratt is an ardent wild life conservationist and for many years has been actively interested in their protection and preservation.

JAMES HAY, JR., (*The Smartest Thing My Dog Ever Did*) has been engaged in newspaper work in Washington, D. C., since 1904, covering political assignments. In late years he has written much for magazines, and has published two novels. At the present time he is writing a series of articles on George Washington.

BISSELL BROOKE (*Zekiah Swamp*) is a feature and short-story writer of Baltimore, Maryland. Educated at Goucher College she has been connected with the *Baltimore Sun* and the *Baltimore News*, making a trip to Europe several years ago to write a series of feature stories. Her articles have appeared in AMERICAN FORESTS from time to time.



Bissell Brooke

WILLIAM MERRIAM ROUSE (*The Fruit of the Tree*) is a nationally known writer of fiction, having published more than 300 short stories since his first in 1913. From his home in the Adirondack Mountains, in New York State, he writes: "If I had known what was ahead of me I should have been a chopper or a river driver and in time I might have worked up to be bull of the woods. Writing, however, is an incurable disease and if one amuses others a little their existence is justified."

ALMA CHESNUT (*Britain's Rising Army of Trees*) is a writer and newspaper woman of outstanding ability, and was at one time a member of the staff of AMERICAN FORESTS. Early this year she went to Europe to do special articles for a number of magazines and newspapers, and at the present time is in London. A native of Maryland, Miss Chesnut at one time was on the staff of the *Baltimore American*.



Alma Chesnut

J. H. BUELL (*Pisgah Forest Aids the Unemployed*) is attached to the staff of the Southern Appalachian Forest Experiment Station, at Asheville, North Carolina.

EDWIN L. STEPHENS (*The Age of Live Oaks*) is president of the Southwestern Louisiana Institute, at Lafayette, Louisiana.

F. L. HIGGINS (*How Florida Is Saving Holly*) is an enthusiastic Floridian, and a resident of Tampa.

ALEXANDER SPRUNT, JR. (*Animals of the Bible*) is another native of the "low country," making his home in Charleston, South Carolina. He has served for a number of years as curator of ornithology at the Charleston Museum, and has written extensively in the field of nature. A few months ago AMERICAN FORESTS published his article, *Birds of the Bible*, and will present more of his interesting work in future issues.



Alexander Sprunt, Jr.

JOSIE PLATT PARLER (*The Southern Railway Turns to Forestry*) has long been identified with club work in South Carolina and has contributed editorially to the press of that State. She is the wife of a doctor and planter in the Santee River country.

WAKELIN MCNEEL (*A Forest Page for Boys and Girls*) has for a number of years been exceedingly active with boys and girls. As Assistant State Club Leader of Wisconsin he makes his home at Madison.

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